TENTH ANNUAL REPORT

of the

Corporation, Board of Managers,

of the

R. I. COLLEGE OF AGRICULTURE

AND

MECHANIC ARTS,

made to the

General Assembly, at its January Session, 1898.

PART I.

Part II, Experiment Station Report, is printed under separate cover.

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1898.

Rhode Island College of Agriculture and Mechanic Arts.

CORPORATION.

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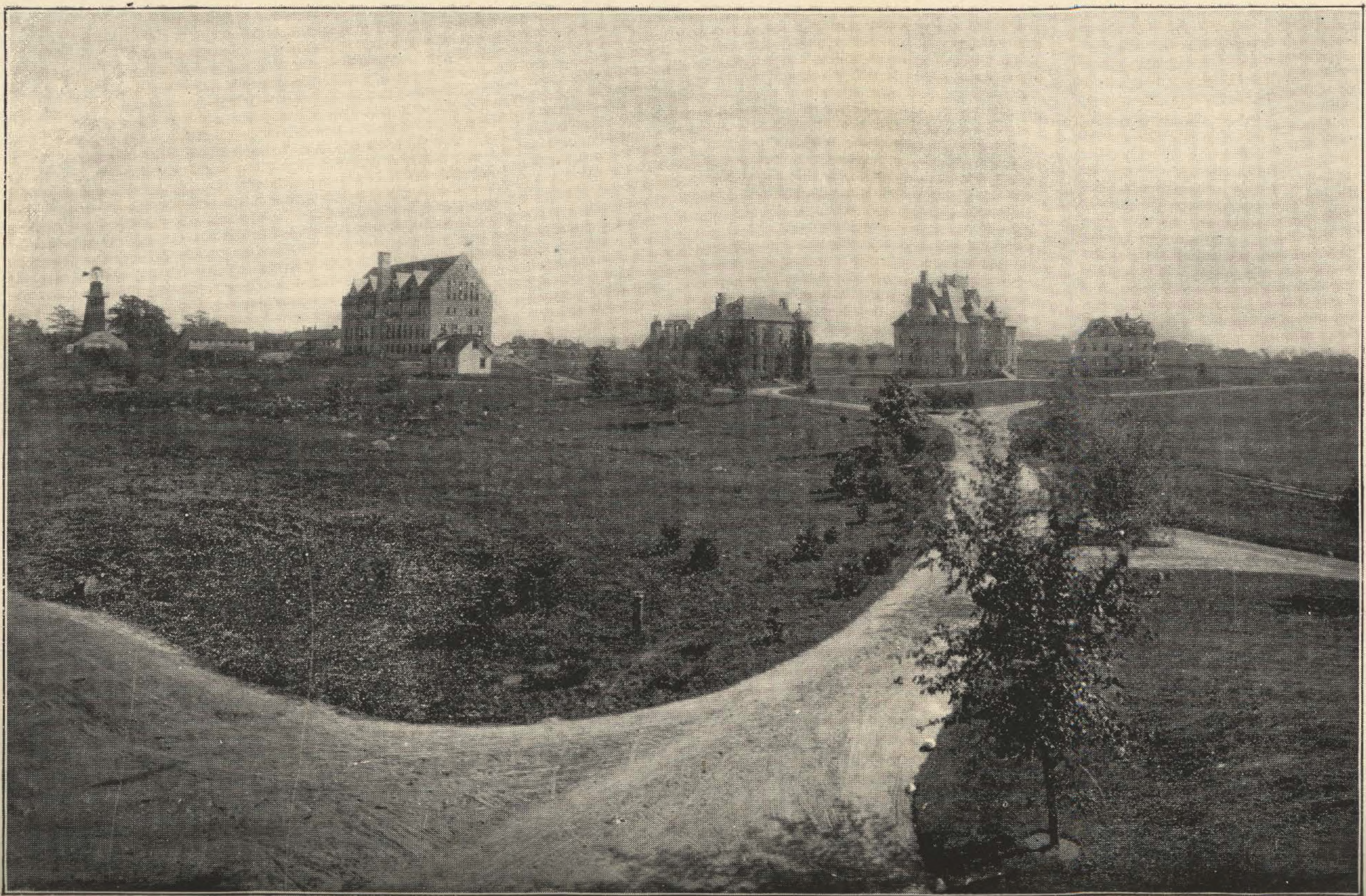
REPORT.

To His Excellency Elisha Dyer, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1898:

I have the honor to submit herewith the Tenth Annual Report of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, as required by law.

CHANDLER H. COGGESHALL,

President of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts.



GENERAL VIEW.

FACULTY AND ASSISTANTS.

JOHN HOSEA WASHBURN, Ph. D.,

PRESIDENT,

Professor of Agricultural Chemistry,

B. S., Massachusetts Agricultural College, 1878; Graduate student, Brown University, 1880; Graduate student, Massachusetts Agricultural College, 1881-1883; Professor of Chemistry, Storrs Agricultural School, 1883-1887; Student in Göttingen University, 1885 and 1887-1889; Ph. D., Göttingen, 1889; Appointed President, 1890.

HOMER JAY WHEELER, Ph. D.,

Professor of Geology,

B. S., Massachusetts Agricultural College, 1883; Assistant Chemist, Massachusetts State Experiment Station, 1883-1887; Graduate student, University of Göttingen, 1887-1889; Ph. D., Göttingen, 1889; Appointed Chemist of R. I. Agricultural Experiment Station and Professor of Geology, 1890.

ANNE LUCY BOSWORTH, B. S.,

Professor of Mathematics,

B. S., Wellesley College, 1890; First Assistant, Amesbury (Mass.) High School, 1890-1892; Appointed Professor of Mathematics, April, 1892; Graduate student at the University of Chicago, summer of 1894 and 1896.

E. JOSEPHINE WATSON, A. M.,

Professor of Languages,

A. B., Smith College, 1882; A. M., The Cornell University, 1883; Assistant in English, Smith College, 1883-1887; Student of North European Languages in Göttingen, 1887-1889; Appointed Professor of Languages, September, 1892; Student of French in Tours, summer of 1895.

WILLIAM ELISHA DRAKE, B. S.,

Professor of Mechanical Engineering,

B. S., Polytechnic Institute, Worcester, 1886; Instructor in Physics and Electricity, Worcester Polytechnic Institute, 1887; Instructor in Woodworking at Pratt Institute, Brooklyn, 1887-1893; Appointed Professor of Mechanical Engineering, 1893.

OLIVER CHASE WIGGIN, M. D.,

Professor of Comparative Anatomy and Physiology,

M. D., Harvard University, 1866; Practicing physician in Providence, 1866-1886; Visiting physician to R. I. Hospital, 1872-1882; Consulting physician to Dexter Asylum, 1875-1885; President Providence Medical Association, 1880-1882; President Rhode Island Medical Society, 1884-1886; Founder of the Providence Lying-in Hospital, and President 1884-1891; Appointed Professor of Comparative Anatomy and Physiology, 1893.

WILLIAM WALLACE WOTHERSPOON,

Captain, 12th Infantry, U. S. A.,

Professor of Military Science and Tactics,

Appointed 2nd Lieutenant, 12th Infantry, October 1, 1873; Promoted 1st Lieutenant, March 20, 1879; Promoted Captain 12th Infantry, April 28, 1893; Appointed Professor of Military Science and Tactics, November, 1894.

HARRIET LATHROP MERROW, A. M.,

Professor of Botany,

B. S., Wellesley College, 1886; Teacher of Science, Plymouth (Mass.) High School, 1887-1888; Teacher of Science, Harcourt Place, Gambler, O., 1888-1891; Graduate student, University of Michigan, 1891-1892; A. M., Wellesley College, 1893; Graduate assistant, Botanical Laboratory, University of Michigan, 1893-1894; Appointed Professor of Botany, January, 1895.

ARTHUR AMBER BRIGHAM, PH. D.,

Professor of Agriculture.

B. S., Massachusetts Agricultural College, 1878; Engaged in practical farming, 1878-1888; Professor of Agriculture in the Imperial Agricultural College at Sapporo, Japan, 1888-1893; Graduate student at Göttingen University, 1893-1896; Ph. D, Göttingen, 1896; Appointed Professor of Agriculture, 1896.

GEORGE WILTON FIELD, PH. D.,

Professor of Zoölogy,

A. B., Brown University, 1887, and A. M., 1890; Ph. D., Johns Hopkins University, 1892; Assistant in Biology, Johns Hopkins University, 1891-1892; Occupant of Smithsonian Table at Naples Zoölogical Station, 1892-1893; Student at University of Munich, 1893; Associate Professor of Cellular Biology, Brown University, 1893-1896; Appointed Professor of Zoölogy, 1896.

FRED WALLACE CARD, M. S.,

Professor of Horticulture,

B. S., Cornell University, 1892; M. S., Cornell University, 1895; Assistant Horticulturist, Cornell University Experiment Station, 1893; Associate Professor of Horticulture, University of Nebraska, 1893-1898; Appointed Professor of Horticulture, 1898.

JAMES DE LOSS TOWAR, B. S.,

Assistant Professor of Agriculture and in Charge of Civil Engineering,

B. S., Michigan Agricultural College, 1885; Graduate student at Michigan Agricultural College, 1890–1891; Assistant Agriculturist, R. I. Experiment Station, 1891-1894; Appointed Assistant Professor of Agriculture, R. I. College of Agriculture and Mechanic Arts, 1893; Appointed in Charge of Civil Engineering, 1895.

JOHN EMERY BUCHER, A. C., PH. D.,

Associate Professor of Chemistry,

State Normal School, Millersville, Pa., 1887–1888; A. C. Lehigh University, 1891; Ph. D., Johns Hopkins University, 1894; Instructor in Organic Chemistry, Tufts College, 1894–1897; Appointed Associate Professor of Chemistry, 1897.

ARTHUR CURTIS SCOTT, B. S.,

Assistant Professor of Physics,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Student at Harvard University, summer course in Physics, 1895; Appointed Instructor in Physics, 1895; Student at The Cornell University, summer course in Physics, 1896; Student at Massachusetts Institute of Technology, summer course in Physics, 1897; Student at Harvard University, summer course in Geology, 1897; Appointed Assistant Professor of Physics, 1897.

MABEL DEWITT ELDRED, B. S.,

Instructor in Drawing,

B. S., R. I. College of Agriculture and Mechanic Arts, 1895; Student at Chase Art School, winter of 1897-1898; Appointed Instructor in Drawing, 1897.

MARY WATKINSON ROCKWELL, B. L.,

Instructor in Languages,

Student at Göttingen, 1887–1889; Graduate, Norwich Free Academy, 1892; Student in France, 1892–1893; B. L., Smith College, 1897; Appointed Instructor in Languages, 1897.

LUCY HARRIET PUTNAM,

Instructor in Expression,

Graduate of School of Expression, Boston, Mass., 1896; Instructor at summer session of School of Expression, Plymouth, Mass., 1896; Appointed Instructor in Expression, 1896.

THOMAS CARROLL RODMAN,

Instructor in Woodwork,

Appointed, 1890.

HELEN ELIZABETH BROOKS,

Instructor in Stenography and Typewriting,

Student in Chandler's Normal Shorthand School, 1894; Graduate of Boston Normal School of Gymnastics, 1897; Appointed Instructor in Stenography and Typewriting, 1898.

GRADUATE ASSISTANTS.

CHARLES SHERMAN CLARKE, B. S.,

Assistant in Mechanics.

JOHN FRANKLIN KNOWLES, B. S.,

Assistant in Woodwork.

HOWLAND BURDICK, B. S.,

Assistant in Agriculture.

CHARLES FRANKLIN KENYON, B. S.,

Assistant in Chemistry.

LOUIS HERBERT MARSLAND, B. S.,

Assistant in Mathematics.

GEORGE BURLEIGH KNIGHT,

Assistant in Ironwork.

NATHANIEL HELME,

Meteorologist.

COLLEGE CALENDAR.

1898.

WINTER TERM.

January 3, 1 P. M	Term begins.
January 27	Day of Prayer for Colleges.
February 22	Washington's Birthday.
March 25	Term ends.

SPRING TERM.

April 4	Term begins.
———	Arbor Day.
May 30	Memorial Day.
June 6	Senior Examinations begin.
June 12	Baccalaureate Sunday.
June 14	Commencement.
June 18, 10 A. M	Entrance Examinations.

FALL TERM.

September 1, 2, 10 A. M	Entrance Examinations.
September 19, 20, 10 A. M	Examination of Conditioned Students.
September 19, 20, 10 A. M	Entrance Examinations.
September 21, 1 P. M	Term begins.
———	Thanksgiving Day.
December 22	Terms ends.

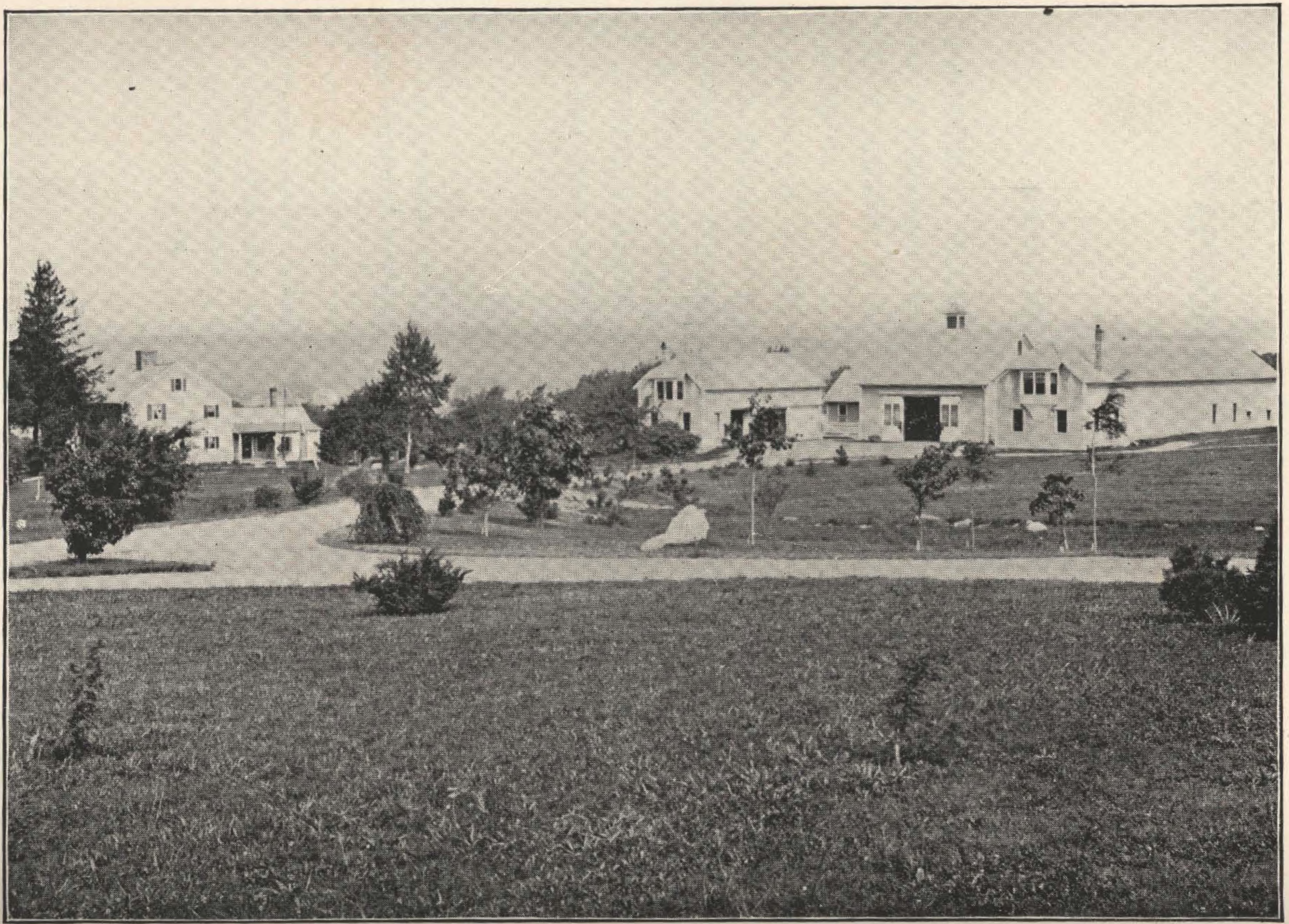
1899.

WINTER TERM.

January 2	Examination of Conditioned Students.
January 3, 1 P. M	Term begins.
March 24	Term ends.

SPRING TERM.

April 3	Examination of Conditioned Students.
April 4, 1 P. M	Term begins.
June 11	Baccalaureate Sunday.
June 13	Term ends.



WATSON HOUSE. FARM BUILDINGS.

THE COLLEGE.

HISTORY.

IN 1863 the State of Rhode Island accepted from the United States Government the land grant scrip, which gave to each State thirty thousand acres of the public lands for each Senator and Representative in Congress. The land was to be sold by the States, or their agents, the proceeds arising from the sale invested, and the annual income derived therefrom was to be "inviolably appropriated by each State which may take and claim the benefit of this act, to the endowment, support and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to Agriculture and Mechanic Arts, in such manner as the Legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

On March 2d, 1887, the act known as the Hatch Act was passed, appropriating $15,000 annually to each State, for the purpose of establishing an Agricultural Experiment Station in connection with an Agricultural College or School.*

From the time of the acceptance by the State of Rhode Island of the land scrip in 1863, there were many people who felt that this State did not offer to young men such advantages for instruction in agriculture and mechanic arts as others afforded that had genuine agricultural and mechanical colleges. So great was the dissatisfaction among the citizens of Rhode Island at the absence of these educational advantages, that they were determined to have the Hatch Agricultural Experiment Station located at a *bona fide* agricultural educational institution.

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* See Bulletin No. 1 of Experiment Station.

The Rhode Island State Agricultural School was established according to Chapter 706 of the Public Laws, passed May 23, 1888. (See Fifth Annual Report, page 6.)

The United States Congress, on August 30, 1890, passed an act known as the new Morrill Bill. This appropriated for the further support of the agricultural and mechanical colleges a sum beginning with $15,000, and continuing with a yearly increase of $1,000 until the annual appropriation should reach $25,000.

That the school already established might receive the benefit of the act of Congress, the General Assembly amended Chapter 706 of the Public Laws (for text see Fifth Annual Report, page 12), incorporating the Rhode Island College of Agriculture and Mechanic Arts.

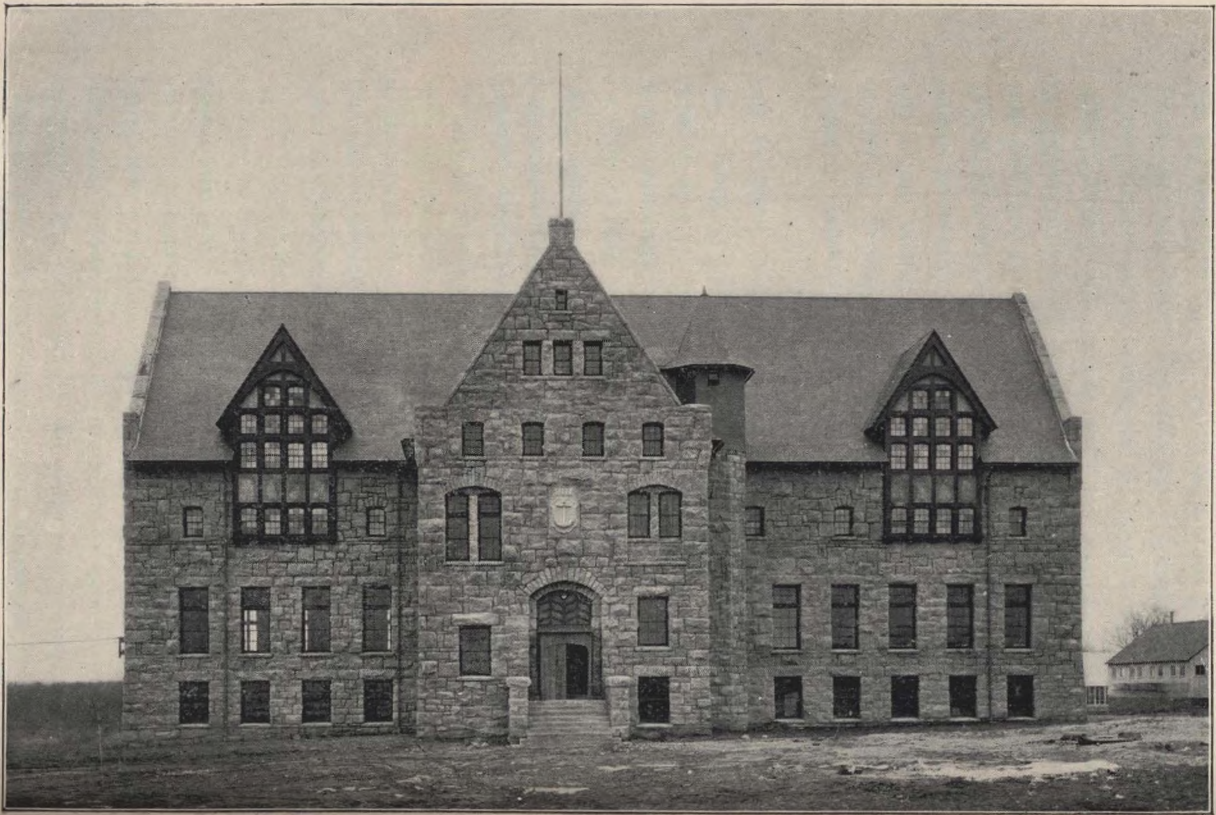
Since September, 1892, the institution has been conducted on a college basis, with an entirely new course of study.

On April 19, 1894, the legislature passed an act authorizing the State treasurer to pay Brown University the sum of $40,000, in consideration of which the University was to turn over to the State the proceeds of the original Land Grant of 1862, and to withdraw from the United States Supreme Court its suit for the Morrill Fund.

On January 27, 1895, the college dormitory was destroyed by fire; but it was replaced by a new granite building, which was ready for use the first of October.

GROWTH DURING 1897.

At the January session of the legislature, 1897, the institution was given an appropriation for a stone building, one hundred and thirty feet by forty feet, practically three stories high. The base-



LIPPITT HALL.

ment has three rooms used for instruction in photography and physics, and a large room devoted to electrical engineering. On the second floor are recitation rooms, chapel, library and reading-room, and young women's study-room. The third floor contains a large hall for drill and gymnasium purposes, above which are bathrooms and lockers. The hall is also used for assemblies, whenever larger audiences are expected than the chapel can accommodate. The building is well equipped with apparatus which the college has owned for some time, and has been waiting to place where the most benefit might be derived from it.

During the past year Miss Anna B. Peckham resigned her position as assistant in languages, to continue her studies elsewhere, and Miss Mary W. Rockwell succeeded her. The appointment of Prof. F. W. Card as horticulturist promises to strengthen the horticultural department. By the addition to the faculty of Dr. J. E. Bucher as associate professor of chemistry, continuous instruction in the chemical laboratory has been rendered possible, and the course in chemistry has profited greatly. It has seemed wise to add this year to our courses stenography and typewriting, to satisfy a long felt need on the part of some of our students. Miss Helen E. Brooks has been appointed instructor in this department. At the opening of the fall term Miss Mabel D. Eldred began work as instructor in drawing, to fill the vacancy made by the resignation of Miss Mary P. Helme, in June last.

The number of students has increased and the quality of scholarship has materially improved during the past year. It will be impossible to admit more students to the institution under the present boarding arrangements. Meals are now furnished to one hundred and five persons. There is only one kitchen, and in that the culinary arrangements are very inadequate. It is hoped that provision will be made for a small addition to the boarding-hall, to comprise a kitchen, rooms for servants, and for the storing of supplies necessary to the economical management of such a house. It is also hoped that within a short time the institution may have a cattle barn so that it may raise its own cattle, not only for use in instruction in the agricultural department but also for the production of milk and butter for the boarding-hall.

During the fall term the institution, in coöperation with General Stone, of the Division of Good Roads, Department of Agriculture, Washington, D. C., gave illustrations of the building of macadam roads in accordance with the principles which the government is endeavoring to teach those people in the country who are interested in good roads. As an outgrowth of this work, a department of road construction has been established at the college. A roller, a distributing cart, a crusher, and all the best machinery used in modern road-making, have been secured. The department has already created a great deal of interest throughout the country, and it is believed that this will be a very useful line of instruction for the young men of the State.

During the past year Miss E. L. Jones has been employed to catalogue the library. The catalogue records over seven thousand volumes and numerous pamphlets, all but a few of which have been bought within four years.

During the summer vacation Dr. G. T. Swarts, of the State Board of Health, made a thorough inspection of the institution and pronounced its plumbing, general location, and condition satisfactory.

OBJECT OF THE INSTITUTION.

The college stands for the idea that technical work, properly taught, possesses educative value equal at least to that furnished by the classics, but that premature specialization is to be avoided if the best results are to be attained; that technical education, to meet the requirements, must be based upon a sound knowledge of mathematics, the natural sciences, and the English language.

The college expects the student to be skilled in the use of the tools of education, viz.: reading, writing, and arithmetic, and with these it aims to assist him to build an educational structure based upon (1) power of correctly observing, (2) power of exactly describing the observations, and (3) power of drawing strictly logical inferences from the observations. The method employed is technical instruction in agriculture, in the mechanic arts, and in the sciences. The student who enters for a full course selects one of five courses, or groups. Each of these offers special facilities in the branches peculiar to it; and in addition, extended studies in language and literature find a place in each course, as the student is impressed with the fact that the purpose of education is two-fold, to confer the utmost benefits upon the community through the individual, and, further, to give to the individual the utmost pleasure and satisfaction for himself.

So far as possible the same opportunities are open to those whose previous preparation has not been so fortunate, and it is hoped that no one will be deterred from making use of them either from a lack of earlier advantages or of money. Thus far no worthy student has been compelled to leave the institution for lack of means. The institution is free to any inhabitant of Rhode Island who is of good character and has the ability to take advantage of the opportunities here offered.

Short courses in agriculture and certain lines of mechanics, and special work in science, are open to those unable to take the regular college work. For these courses no examination is required, except such as will satisfy the professor in charge of any branch chosen that the applicant is prepared to derive benefit from the work he wishes to elect. Whenever possible, however, students are urged to enter one of the courses leading to a degree. The arrangement of these courses is the result of careful thought and long experience as to the best combination of studies to fit one for the various occupations in which a technical education is required; and it is believed that no such thorough preparation can be obtained from special courses elected by the student.

REQUIREMENTS FOR ADMISSION TO PREPARATORY DEPARTMENT, 1898.

Candidates for admission must bring testimonials of good character and must be not less than fifteen years of age. Oral and written examinations will be given in advanced arithmetic, geography, English grammar, and United States history. Each candidate will be required to write a short composition upon a subject announced at the time of the examination. The composition will be expected to show familiarity with the works mentioned below: Hawthorne's Wonder Book, Dickens's Christmas Carol, Irving's Sketch Book, Scott's Lady of the Lake, Longfellow's Evangeline. Applicants for the regular course will find some knowledge of algebra of great assistance.

Students entering the preparatory department may take, together with the regular studies of this course, any other work from the college courses for which they are prepared.

REQUIREMENTS FOR ADMISSION TO THE COLLEGE, 1898.

Candidates for admission to the Freshman class will be examined in arithmetic; algebra; plane geometry; English grammar; advanced English; United States history; geography, physical and political; one year of German, French, or Latin.

In the arithmetic examination especial attention will be paid to fractions, the metric system, simple and compound proportion and square and cube root; thorough drill in mental arithmetic will be necessary. The applicant should have mastered all of Wells's Academic or Wentworth's School Algebra, and Wells's Plane Geometry, or their equivalents. In geography, familiarity with some common school text-book will be expected. Frye's geography is recommended. The history requirements will be met by familiarity with Fiske's or some similar United States history. The examination in English grammar will include definitions, formation of plurals, inflexion of nouns, pronouns and verbs, comparison of adjectives and adverbs, analysis and parsing, with especial attention to punctuation and the use of capitals The advanced English requirements are those prescribed for entrance to the New England colleges. The student will be expected to show familiarity with the works named below. These are divided into two classes. Those marked (*a*) are to be read, and the candidate will be required to show a general knowledge of their subject-matter, and of the lives of the authors. Those marked (*b*) are to be thoroughly studied, so that the candidate will be able to pass an examination upon their subject-matter and structure. The books prescribed for 1898 are the following: (*a*) Milton's Paradise Lost, books I and II; Pope's Iliad, books I and XXII; The Sir Roger de Coverley Papers, in the Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's Rime of the Ancient Mariner; Southey's Life of Nelson; Carlyle's Essay on Burns; Lowell's Vision of Sir Launfal; Hawthorne's The House of the Seven Gables. (*b*) Shakespeare's Macbeth; Burke's Speech on Conciliation with America; De Quincey's Flight of a Tartar Tribe; Tennyson's The Princess. For 1899: (*a*) Dryden's Palamon and Arcite; Pope's Iliad, books I, VI, XXII, XXIV; The Sir Roger de Coverley Papers, in the Spectator; Goldsmith's The Vicar of Wakefield; Coleridge's The Ancient Mariner; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mochicans; Lowell's The Vision of Sir Launfal; Hawthorne's The House of the Seven Gables. (*b*) Shakespeare's Macbeth; Milton's Paradise Lost, books, I and II; Burke's Conciliation with America; Carlyle's Essay on Burns. For 1900: (*a*) Dryden's Palamon and Arcite; Pope's Iliad, books I, VI, XXII, XXIV; The Sir Roger de Coverley Papers, in the Spectator; Goldsmith's The Vicar of Wakefield; Scott's Ivanhoe; De Quincey's The Flight of a Tartar Tribe; Cooper's The Last of the Mohicans; Tennyson's The Princess; Lowell's The Vision of Sir Launfal. (*b*) Shakespeare's Macbeth; Milton's Paradise Lost, books I and II, Burke's Conciliation with America; Macaulay's essays on Milton and on Addison. The language requirements will cover one year's work in either French, German, or Latin. In French and German, this requirement comprises the essentials of grammar, easy reading, and elementary composition. In Latin, the candidate must be prepared to study Cæsar. The following text-books are recommended: Chardenal's Complete French Course, Lyon and De Lapent's Primary French Translation Book; the Joynes-Meissner German Grammar, Part I; Guerber's Märchen and Erzählungen, Part I; Collar and Daniel's Beginner's Latin Book.

ADMISSION TO ADVANCED STANDING.

Candidates may enter any of the higher classes for whose work they are prepared.

OPPORTUNITIES OFFERED TO WOMEN.

The courses offered to men are open to women, together with special courses. The women's dormitory will accommodate a limited number of students, and the college will on application find boarding places for others in private families in town. Special waiting and study rooms are provided for the women who are day students.

EXPENSES FOR WOMEN.

Board, including room rent, is three dollars per week. Fuel and lights are supplied at cost. Rooms are provided with necessary furniture, including mattresses, but no other bedding material. Other expenses are as given below. The women have an opportunity to do their own washing and ironing. A Singer and a Household sewing-machine are at the disposal of all those living at the dormitory.

EXPENSES.*

Tuition is free to all Rhode Island students. The regular expenses are tabulated below:

	Per Year.	
	Minimum.	Maximum.
Room rent, $2 per term	$6 00	$6 00
Board, $3 per week, for 36 weeks	108 00	108 00
Fuel, spring and fall terms, each $3, winter term $6	12 00	12 00

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*For exceptions in the expenses for women, see above.

	Per Year.	
	Minimum.	Maximum.
Light, $1 to $3 per term	$3 00	$9 00
Books	15 00	30 00
Washing, 30c. to 60c. per week	10 80	21 60
Uniform for military drill, $15	7 50	30 00
Reading room tax, 25c. per term	75	75
General expense, for damage in buildings, etc., 50c. per term	1 50	1 50
Laboratory fees, $2 to $10 per term	6 00	30 00
	$170 55	$248 85

The amount of laboratory fees depends upon the laboratory work taken each term. One dollar per term is charged for each of the following: botanical, zoölogical and physical laboratories; carpenter shop; wood-turning; forge shop; machine shop and wood-carving. This pays for the material ordinarily used in class work and for the wear and care of tools and apparatus. Any person who breaks apparatus or tools through carelessness or neglect of instructions, will be charged the cost of the same. The chemical laboratory fee is three dollars per term for qualitative, quantitative and organic laboratory work. This covers general chemicals and use of apparatus. Students are required to pay for breakage and for any chemicals they may use in making special preparations for themselves. The uniform must be paid for immediately on entering the college, when the students are measured for the suits. Every able-bodied male student is required to drill and to wear a uniform. When worn only on drill and properly cared for, one uniform may last two or more years. The student may, however, wear his uniform all the time. A reduction of fifty cents per week on board is allowed to students going home Friday afternoon and returning Monday forenoon, provided that notice of the intended absence is given in advance. Those failing to give such notice will be charged full price for board. No other reduction is made for less than three whole days' absence at one time, and this only when notice is given as above. Fifteen cents extra is charged for each meal sent to a student's room, from sickness or any other cause. The college conveys students daily to and from the railroad station free of charge. Once at the beginning and end of each term, a team conveys trunks to and from the station. All students in the men's dormitory are required to supply their own furniture and bedding. The necessary furniture may be obtained at the college when desired. A room may be furnished for from eight to ten dollars. Iron bedsteads three feet wide and curtains are included under room-rent. The furniture, if properly kept, may be sold, when the student leaves, for one-half to three-fourths the original price. All clothing should be distinctly marked. Graduates pay the cost of diplomas, five dollars. No diploma will be issued until the candidate has paid all term bills. Day students are required to deposit ten dollars per term in advance. Boarding students shall pay term bills in advance, deposit fifty dollars each term, or give bond for two hundred dollars for the payment of all bills. No bond will be accepted from any member of the faculty.

SELF-HELP.

A limited amount of work about the buildings, on the farm, at the experiment station, and in the laboratories, will be furnished to students who desire it, and who prove industrious and trustworthy. Good students, who desire to help in paying their expenses, should be able to earn from twenty-five to one hundred dollars per year, depending upon the amount of time they can spare from their studies. *No work is given to students who have not a fair standing in their classes.* The larger sums can be earned only by students who spend their vacations here at work. These opportunities are offered only to students who show a sense of responsibility in the performance of the duties assigned to them, and a disposition to render a fair equivalent of work for the compensation they receive.

REGULATIONS OF THE COLLEGE.

Students who do not understand the elements of gentlemanly conduct will not continue to be members of the institution. Negligence or absence from class duties of any kind will be vigorously opposed. Students are expected to attend all recitations. An excuse for absence from a single exercise is not required. It is supposed that the student will not absent himself unless he has sufficient reason for doing so, and of this reason he must himself be judge. Any student absenting himself from more than ten per cent. of the total number of recitations in any subject shall not be allowed to take his examination in that subject, except by special vote of the faculty, but shall be conditioned. Examinations of conditioned students shall be held only on the days assigned in the college calendar. Any student who after such examination shall still have three or more conditions shall be obliged to withdraw from the college. Students still having not more than two conditions may take second examinations at the next regular time, and failing to pass shall have no further opportunity to remove such conditions, except by special vote of the faculty.

Students rooming in the dormitory are expected to conduct themselves with the same decorum as in a private house. Any undue noise or actions liable to disturb the other occupants of the building will cause the offender to be publicly warned; and on a repetition of the offence, he will be dismissed from the dormitory, for a stated time or permanently, according to the nature of the offence. Money paid for dormitory expenses will not be returned to any student thus dismissed.

PUBLIC WORSHIP.

The students are expected to be present at chapel exercises every morning, and on Sundays to attend service in some church at least once a day. Absence from chapel must be reported at the president's office for excuse on Tuesday morning of each week.

A branch of the Intercollegiate Young Men's Christian Association is doing good work among the students, as is also the Young Women's Christian Union. Eminent preachers are from time to time invited to address the students.

LOCATION.

The college is situated on a hillside, which furnishes it with quick drainage and a delightful view. It is less than two miles from the railroad station. A macadamized road leads from the grounds to the station, insuring at all times a good walk and drive. The railroad station is situated on the New York, New Haven & Hartford R. R., with twenty-one trains daily, in the winter, stopping at Kingston, and more in the summer. The town is a very healthful place, five or six miles from the ocean.

DEPARTMENTS OF INSTRUCTION.

CHEMISTRY.

Instruction in chemistry begins with the third term of the Sophomore year, and consists of recitations and lectures with laboratory work. Any branch of chemistry may be elected for special work. Since 1897 a chemical course has been offered. General chemistry is taught during the last term of the Sophomore and the first term of the Junior year, in three exercises of recitation and lectures and one exercise of laboratory work each week. Special attention is given to inorganic preparations and problems. Qualitative analysis extends through two terms and is followed by volumetric and quantitative analysis. A course in organic chemistry, in the winter term of the Junior year, treats of the hydrocarbons and their derivatives as far as the benzine series, three exercises per week being devoted to recitations and lectures, and one exercise to laboratory work. The class work is based upon Remsen's Organic Chemistry, and the laboratory practice on Gattermann's Practical Methods of Organic Chemistry. An elective on the benzine series, with two recitations and one exercise of laboratory practice per week, is given in the spring term. The instruction in agricultural chemistry consists of lectures and recitations with laboratory work upon artificial digestion; analysis of soils, fodders, and fertilizers, milk, butter, and cheese; tests for poisons in the stomachs of different animals; analysis of fruits for sugar, starch, and albuminoids; and the study of chemical changes in soils. Women may substitute for agricultural chemistry an elective on the chemistry of cooking. A five-hour course in sanitary chemistry or in physiological chemistry may be taken by students who have completed courses I, II, III, and IV. Elective work in the dyeing of wool, cotton and silk, and of mixtures of the same, is offered to those who have finished the courses in general and organic chemistry and quantitative analysis.

PHYSICS.

Instruction in physics begins with the first term, Freshman year, and consists of lectures and recitations attended by all regular students. The various branches grouped under this head are treated both mathematically and experimentally, particular attention being given to practical application. Heat and sound are studied in the fall term, magnetism and electricity in the winter term, and light and mechanics in the spring term. The winter term is devoted entirely to the study of electricity and magnetism. The advanced study of light embraces an extended discussion of photography, photo-micrography, the use of the microscope and of the projecting lantern. This department is fully equipped to illustrate the use of any form of light employed at the present time in projection work, together with all accessories including the projection microscope and apparatus for the projection of photographs in original color.

A course in advanced physics is open to all students who have completed course I, or its equivalent. This course includes a deeper and more theoretical study of the subjects of course I, and is treated by lectures and recitations, together with an extended course in laboratory work designed to make the student more careful and accurate in his work and to encourage original investigation.

A special course in electricity is now open to all students having an elementary knowledge of the subject. As a foundation for subsequent work, instruction is given in the theory of electricity, together with thorough consideration of the various technical applications of electricity, including land and sub-marine telegraphy, the telephone, electric lighting, and the electrical generation and transmission of power. Advanced instruction is given in electrical measurements, including the use of the storage battery (which is constantly becoming more valuable to electric plants), methods of electrolysis, electro-plating and electro-metallurgy, together with a practical understanding of generators and the testing of telegraph and telephone lines.

Special instruction in photography is offered in an elective course to students who have an elementary knowledge of physics and chemistry. The course embraces lectures and recitations upon the subject, together with practical methods of photography in the working of negatives, photographs, bromide enlargements and lantern slides. The college is supplied with the most approved form of apparatus for X-ray photography, and the theory of the work in this line is taught, together with its practical applications. Special rooms for photographic work are provided, which will aid greatly to improve the instruction in this branch.

Facilities for instruction in physics are now of the best. A large room in Lippitt Hall is arranged especially for laboratory work, and the apparatus room adjoining is sufficient to hold the lecture-room and experimental apparatus with which the department is well equipped.

A course in electrical engineering will be open to students as soon as the large laboratory provided in the basement of Lippitt Hall can be properly equipped with machines for experimental work. This laboratory is already provided with two sixty horse-power boilers, three engines, one of which is a fifty horse-power Armington and Sims, used in connection with an Eddy twenty-five K. W. machine for lighting the college, and one eight K. W. dynamo that is used for experimental work. A storage battery of the most approved type, of 110 cells, is also in place for the course.

PHYSIOGRAPHY.

The Freshman class study physiography during the first term, with three exercises per week of recitation and one of laboratory work, with occasional excursions and field work. A well equipped physiographic laboratory, with globes, models, maps, charts and other illustrative material, together with a special library, is open to the students. Especial attention is given to the scientific phases of the study—to the chemistry and geology of the soils, the influence of air and water on the same ; and some reading and time are expended on the flora and fauna of the different countries. Tarr's Physical Geography is taken as a basis ; and Dana's Coral Islands, Shaler's Aspects of the Earth, and Dana's Characteristics of Volcanoes are thoroughly studied during the term. Five hundred lantern slides illustrating ethnological subjects are projected and explained before the class. This course seems especially valuable to introduce the student to the scientific studies which are to follow.

AGRICULTURAL GEOLOGY.

The course in agricultural geology embraces structural, dynamical and historical geology, particular attention being paid to the first mentioned subdivision. A careful study is made of those minerals and rocks of importance in the formation of soils, of the agencies by which their decomposition is effected, and of the compounds which result. In this connection the instruction is designed to familiarize the student with the desirable mineral and physical features of soils, with those compounds the presence of which is undesirable or which may give rise to a greater or less degree of soil sterility, and with the means by which such conditions may be avoided or overcome. A proportionate amount of time is devoted to the history of those natural deposits of particular interest to agriculturists ; such as, nitrate of soda, the German potash salts, and phosphates of various kinds.

BOTANY.

The required work in botany for students in agriculture covers three terms. The first two terms are devoted to the study of a few groups of plants from the lowest to the highest. Seed-plants of economic importance are studied in the third term, special attention being given to grasses, fodder plants and weeds. Physiological problems are occasionally introduced. Each student is supplied with a compound microscope, a dissecting microscope, reagents and small instruments. The laboratory is provided with apparatus for simple physiological experiments, a microtome, paraffin bath, charts, thirty Brendel models, Briosi and Cavara's Parasitic Fungi of cultivated plants, Ellis's Fungi Columbiani, Seymour and Earle's Economic Fungi, and an increasing collection of native plants. A good working library and several American and foreign periodicals are an important part of the equipment of the laboratory.

It is believed that excellent advantages are offered for those who wish to elect work in the parasitic fungi of seed-plants. The laboratory is provided with a supply of dry and alcoholic material, and collecting fields for fresh material are near at hand.

For the class of 1902, the botanical work will be in general as outlined above, but somewhat elaborated to suit the needs of the more advanced students.

COMPARATIVE ANATOMY AND PHYSIOLOGY.

Third Year.—Comparative anatomy and physiology, chiefly of the vertebrated animals, during the winter and spring terms.

Fourth Year.—Veterinary science during the fall term; physiological psychology through the winter term.

This department has been greatly enriched by the furnishing of ample lecture-rooms, laboratories, and a special library. Several thousand dollars have been expended for a synoptical collection for the study of zoölogy and human and comparative anatomy. In the laboratories are found all necessary conveniences for dissecting, mounting and preserving animals, and for embryological, physiological and microscopical work. For purposes of demonstration there are (1) mounted microscopical objects representing every kind of tissue and cell in the animal system, (2) the living subject for dissection, (3) alcoholic preservations, models in plaster and *papier maché*, skeletons and stuffed subjects of most of the orders of the animal kingdom, from a sponge to a man, (4) Leuckart's zoölogical wall-charts, and other charts and diagrams of our own make, (5) ample blackboard facilities of which much is made, (6) chemical and physical apparatus, (7) all necessary mechanical appliances. The collection of skeletons of all the domestic animals cannot be excelled. In the class of birds there have been added all the species of Rhode Island, comprising some 270 individuals. These prove of exceptional interest and stimulate inquiry because of their local habitat and more or less familiar mien. In the collection are found the skeletons of the great classes of birds showing striking structural peculiarities. It is also proposed to add the nests and eggs of all those species of the collection which nest in the State. It will thus be seen that there is an exceptionally good equipment for teaching the courses in zoölogy, physiology, and anatomy, both human and comparative, which are so liberally provided for in this college.

Apparatus is being collected for the course in experimental psychology. The course occupies but one term, and the time given to experimentation is limited. The demonstrations are simple mechanical appliances to illustrate the sensations and perceptions. But few experiments are attempted on the more complex mental phenomena, which require intricate and costly appliances, much time, and more special training than the college students can summon. The beautiful models and charts of the human brain, spinal cord, and organs of special sense, are most serviceable in teaching the mechanism and functions of the great nerve centres. The appliances in this department are so complete as to expedite the study in no small degree. It is believed that a more lively interest is thus created, that more ground is covered, and that a clearer comprehension of this branch is given than could otherwise be done in twice the time allotted to it. The same claim may be predicated of the whole range of biological studies.

ZOÖLOGY.

This department is open to students who have done satisfactory work in the course in biology of plants, or an equivalent. There are two general courses; for Sophomores in animal biology, and for Juniors in zoölogy. Instruction in animal biology embraces a careful treatment, through the laboratory, lecture and text-book, of the general anatomical, physiological and developmental phenomena of animal life; the conditions and the causes of the broad manifestations of life, in the cell, in the individual, and in the race. The types studied are: Amœba, Paramœcium, Vorticella, Hydra, earthworm, frog. Among the questions dealt with are the meaning of such terms as protoplasm, nutrition, growth, reproduction, life, death, the physiological division of labor, heredity, the views held by the different schools of evolutionists, the variation of species, effect of environment, natural selection, parasitism, and geographical distribution. In brief, it is a course adapted for the general student who wishes a knowledge sufficient to comprehend and to profit by the important current discussions bearing upon man's relations to his environment; at the same time it gives a broad foundation for one who plans to enter upon a career in biological science, either as teacher, investigator, or medical practitioner.

The course in zoölogy is intended especially for (1) agricultural students, (2) students who are preparing for entrance to the medical profession, (3) those who, having pursued the courses in plant and animal biology, wish to advance further into the science as teachers and investigators. Instruction is by actual dissection of the fresh specimens supplemented by lectures, text-book and written exercises.

Proximity to sea-coast renders possible the study under natural conditions, as well as in aquaria, of the habits and development of many marine animals. The Experiment Station's Marine Laboratory, under the direction of the professor of zoölogy, is open to students who show capacity for effective work. It is located on the shores of the town, near Point Judith, and offers excellent opportunities for original investigation and experimentation upon problems of marine biology. Further opportunities for study are furnished by springs, streams, ponds (natural and artificial), and lakes, upon or immediately adjacent to the college gronnds. These added to the location of the college township—in the southeast corner of Rhode Island, with its diversity of coast line, the east on Narragansett bay, its south shore on the Atlantic—renders the institution an ideal locality for biological study.

The department is provided with Leuckart's charts; Ziegler's and other models; preparations of skins and skeletons of typical vertebrated animals; including such rare forms as the gorilla, chimpanzee, lemurs, phalangers, manatee, and sloth; the birds and mammals peculiar to the Australian region; the lung-fishes (Dipnoi); the Surinam toad; the giant salamander (C. Japonicus); preserved specimens and preparations of the most important invertebrated forms; including Nautilus in shell, Argonauta, and Metacrinus; aquaria for living specimens; projection lantern for class demonstration of macroscopic and microscopic preparations. The department library includes the best literature on the subject; all of the current zoölogical journals are available, either at the Experiment Station library, or by special arrangements. The collection illustrating the zoölogy of Rhode Island is the best in the State, and is steadily growing.

Advanced courses are open to students who have had the requisite training. Comparative normal histology, dealing with the microscopical structure of cells and tissues of the organs of the lower and of the higher animals, including modern methods of microchemical technique and histological investigation, is a course particularly adapted for students who intend to fit themselves for the medical profession. The course in morphology of the invertebrated animals offers an opportunity for careful study of the marine forms found in Narragansett bay, and in addition certain typical forms from abroad. A course in comparative osteology of the vertebrated animals permits an extension of the courses in comparative anatomy. Comparative embryology is offered as a special course to students who are sufficently advanced. General comparative embryology is covered in the courses in plant and animal biology.

Students who wish to make a specialty of biological science for the purpose of becoming science teachers or of pursuing a medical course are advised to give the utmost possible attention to physiography; chemistry; physics; English; German; French; Latin; free-hand drawing, including water colors; civil government and political economy, in addition to the biological sciences.

Students are urged to consult freely with their instructors in regard to selection of courses.

AGRICULTURE.

In connection with the new course in agriculture, it may be said that the foundation instruction is largely given in the study of chemistry, botany, physics, geology, anatomy, physiology, zoölogy, and economics.

Following upon this fundamental knowledge, it is the aim in the agricultural course to teach the student the practical application of the scientific principles underlying technical agriculture. This is sought to be accomplished by means of lectures and recitations and by the use of text-books and reference books so far as available. The chief desire is to supplement, enforce and fix this instruction by what may be termed laboratory work in agriculture; that is, by actual educational practice in the different branches of farming.

Commencing in the spring term of the Freshman year, an introduction is given in the form of lectures dealing with the origin and necessity of agriculture, its relation to other occupations, the preparation for farming, the relations of air, water and sunshine and of plant and animal life to agriculture. In the Sophomore year a study is made of farm soils—their characteristics, classification and adaptions, their faults and means of improvement, clearing land and preparing for crops, irrigation and land drainage, with practice in planning and constructing systems of underdraining on the college farm. In the winter term instruction is supplied in the construction, use and care of farm implements, machines and vehicles; and in the arrangement, construction and maintenance of farm buildings, fences, roads, and bridges. In the spring term fertilization is dealt with, and the instruction is reinforced by object lessons offered by the fertilization experiments of the experiment station department and by the manuring for the farm crops. In the Junior year, horticulture is chiefly taught; embracing the topics—garden crops, market-gardening and greenhouse culture, fruit culture, floriculture and ornamental gardening, with plant breeding and forestry as special elective subjects. In the Senior year opportunity is provided to study live stock husbandry, including the breeds, breeding, care and management of farm animals; rational feeding of live stock; dairy husbandry; poultry culture; farm management and accounts.

Further elective subjects are available to advanced students by special arrangement, including the history and economics of agriculture, agricultural and horticultural literature, farm law, apiculture, agricultural debate, and agricultural experimentation.

During the course in agriculture occasional inspection excursions will be made by the classes to learn what practical, successful specialists in the various branches of modern farming are doing.

Plans for short special courses in agriculture have been made. These courses will instruct special students in the principles and details of the best modern practical poultry farming, dairy farming and horticulture. For putting these courses into operation the college awaits the providing by the State of suitable buildings. There are funds available for the purchase of live stock, apparatus and equipment, also for instruction. The provision of the needed buildings will at the same time greatly reinforce the means of instruction in the regular agricultural course.

HORTICULTURE.

In September, 1898, Prof. F. W. Card will arrange the courses in horticulture. The new courses will be published in the catalogue for 1899.

LANGUAGES.

The subjects grouped under this head are English, German, French, Latin, and expression. In September, 1898, the new courses of study will be adopted, affecting for the most part preparatory students and Freshmen.

English—comprising composition, rhetoric, and literature—may be studied throughout the four years. It will be required during the preparatory year and the first three years of the collegiate course. The work of the preparatory students will consist of a review of English grammar, and a study of Lockwood's Lessons in English. Exercises in composition and American literature will be features of this course. The theory and practice of rhetoric will be taught throughout the Freshman year, and the application of rhetorical principles will be sought in illustrative readings and fortnightly themes. In 1898 this course will be required of the Sophomores during the fall and winter terms. In 1899 the Sophomores will make a critical study of certain prose masterpieces and will write essays and various short papers. The required work of the Juniors will consist of a study of the great English poets from Chaucer to Tennyson. Collateral reading will be supplied, and students will be encouraged to special investigation along literary and historical lines. In the Senior year electives are offered at present in literature and themes. In 1901 work in historical English and argumentation may also be taken. In the new courses three years of foreign language study will be required for graduation, one preparatory and two advanced. It is desirable that two of the three years be spent upon one language.

A three years' course in German has been arranged, which may be begun in either the Freshman or Sophomore year. As far as possible the language itself is made the medium of instruction, and the subject is studied in grammar work, dictation, conversation, and translation—from English into German and from German into English. The course is carefully graded. As soon as a small vocabulary is acquired the student begins the reading of simple prose and poetry, passing gradually to more difficult texts. Course IV—Scientific German—may be taken instead of III—German Classics — by those especially interested in scientific work.

French is begun in the Freshman year and may be studied throughout the four years. Nine courses are offered. The instruction in this language is similar to that given in German. Grammar, conversation, dictation, translation, and composition are taught. Scientific French is studied during the spring term of the second year.

Latin is elective. The college offers a two years' course. Should a student wish to pursue the subject farther, he may do so at his own expense, by taking private lessons of the instructor. Much attention will be paid to derivation of words, in order that such study may aid in comprehending the terminology of science.

The aim of the course in expression is to teach one to read easily and intelligently, and to think accurately and rapidly. The work consists of sight reading, extemporaneous speaking, recitations, and the delivery of original orations. Expression is elective throughout the course.

In the building of Lippitt Hall excellent accommodations were provided for the library. Students now have freer access to the books than was possible before, and it is believed that the library will prove a valuable addition to the educational facilities of the college.

MATHEMATICS.

Beginning with September, 1898, three courses in mathematics are prescribed for all candidates for a degree ; the subjects being higher algebra, plane trigonometry, and solid and spherical geometry. The work extends throughout the Freshman year, and is of the utmost importance, both as a basis for further work in mathematics and science, and as a means for developing the power of logical reasoning and of exact and concise expression. It is the aim throughout the course to select such problems and applications as shall have direct bearing upon practical subjects.

Courses in analytical geometry and calculus are required of students in the mechanical and physics-mathematical courses, in addition to the above, and a number of electives are open to students who propose to make a specialty of mathematics or of any of the sciences which depend largely upon it.

The course in analytical geometry includes the subject of loci and their equations, the analytical demonstration of many geometrical theorems, and the simpler properties of the conic sections. The work in calculus includes the differentiation of algebraic, trigonometric, anti-trigonometric, exponential and logarithmic functions, successive differentiation, and the integration of simple functions, illustrated by applications to the rectification of plane curves, the areas of plane curves and the surface and volume of solids of revolution. The fundamental formulas of mechanics are developed and illustrated. The more familiar devices for integration are studied, and a short time is devoted to the interesting subject of curve-tracing.

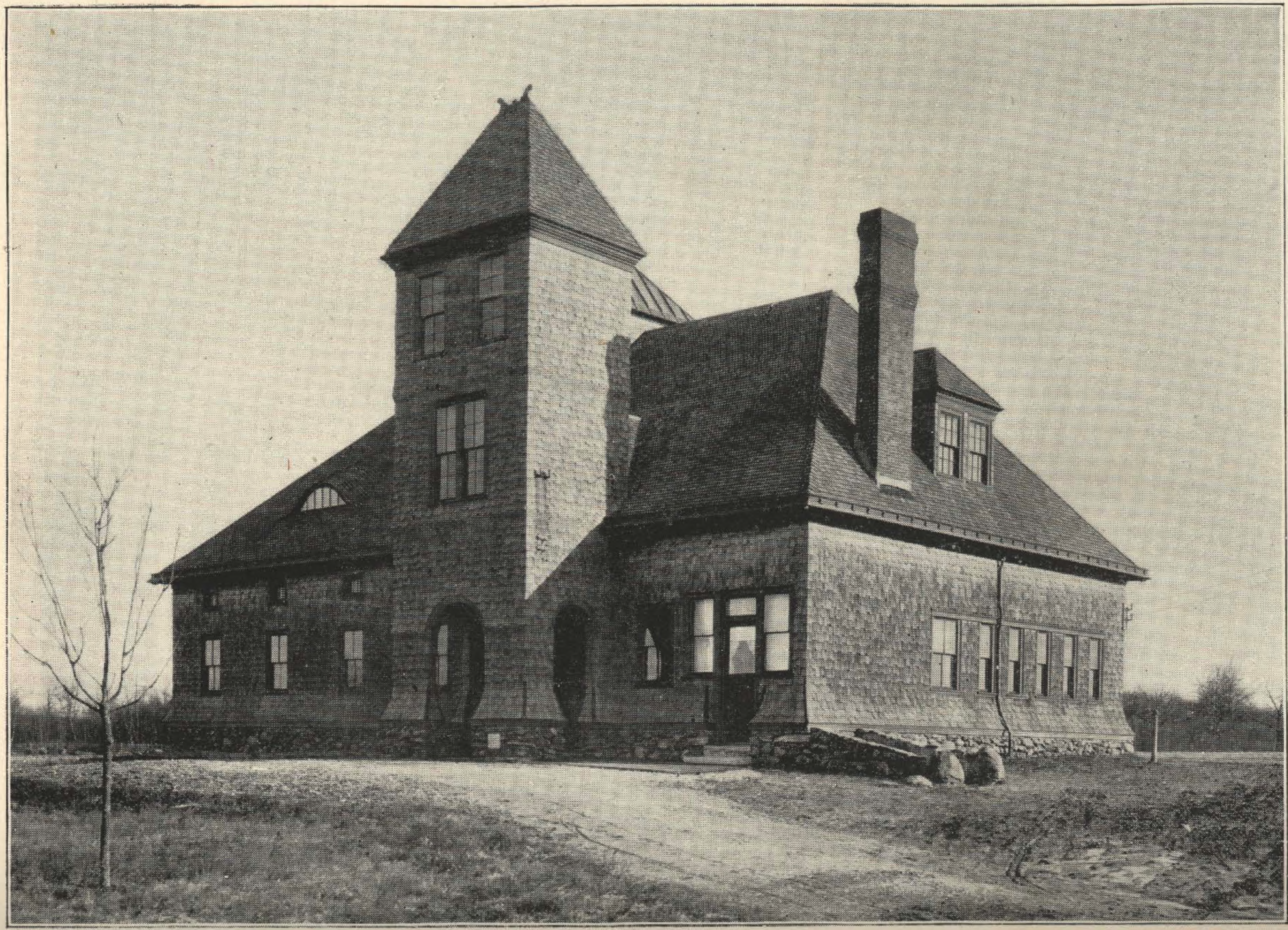
Students wishing to prepare for advanced work along the lines of mechanical or electrical engineering are especially advised to elect the courses offered in advanced integral calculus, analytical mechanics, and differential equations, while those who desire an insight into the development of modern pure mathematics may elect work in projective geometry, modern analytical geometry, theory of equations, and theory of functions.

Two elective courses are offered in astronomy, one in practical astronomy, in which the simpler problems of practical astronomy are discussed, and a lecture course in physical astronomy, the aim of which is to make the students familiar with the general characteristics of the various members of the solar system, and to emphasize the general laws which govern the universe. A four-inch equatorial telescope, an eighteen-inch celestial globe, a large collection of lantern-slides of astronomical phenomena, and a small but carefully chosen reference library, add greatly to the resources of the department.

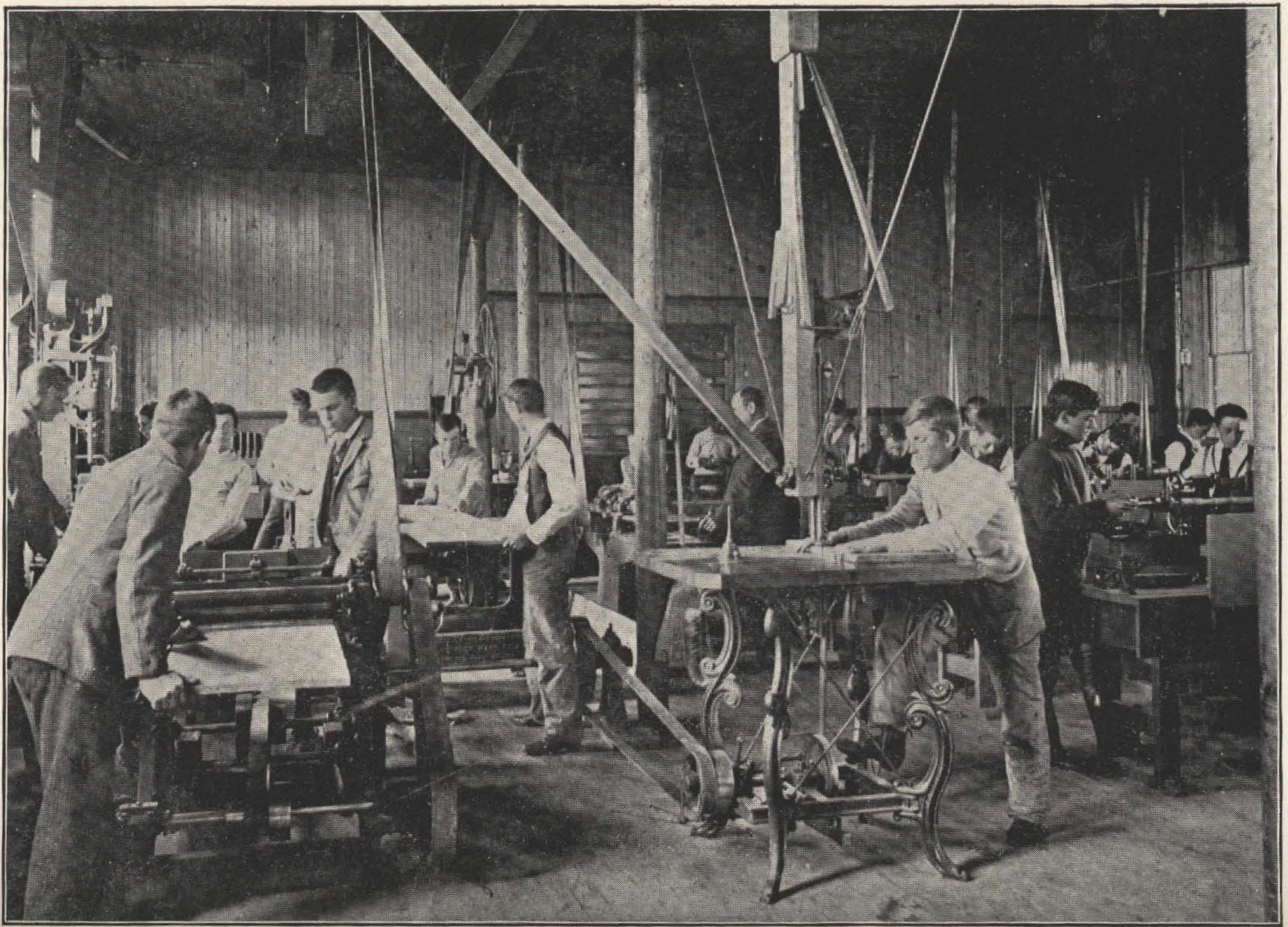
In civil engineering three courses are offered. Plane surveying is taken up by the agricultural Sophomores in the spring term, and is followed by a course in leveling, grading, and road construction during the first term of the Junior year. This work is supplemented by practice with the compass, chain, and transit in measuring areas and plotting land, as well as work with the levels, drawing profiles, and establishing grade lines for roads. More advanced work in engineering is offered the Seniors in the spring term, while thoroughout the course practical surveying is given those students desirous of doing extra work in this line.

MECHANICAL ENGINEERING.

The aim of this department is to give sound theoretical and thorough practical training to students who seek to prepare themselves for useful and responsible positions. No attempt is made to teach trades; but the course offered in shop-work will furnish such training as will ensure, other things being equal, marked success in mechanical pursuits subsequent to graduation. The regular four years' course deals with mechanical engineering as applicable to the industries carried on in New England, and particularly in Rhode Island. Special attention is given to the de-



LADD LABORATORY.



THE WOOD-WORKING MACHINERY.

signs and the economical operation of shops and mills, and of manufacturing and industrial machinery. Thorough courses in mathematics, physics, chemistry, electricity, English, French, and German are made the basis of this work. The subjects of mechanism, metallurgy, heating and ventilation of buildings, engineering specifications, and laws of contracts are treated by lectures and text-books. The several laboratories are well-equipped for working in wood and metals and for the testing of materials used in construction. Students in the department of mechanical engineering receive instruction in bench-work in wood, wood-turning, pattern-making, forging, machine-shop work, and mechanical drawing.

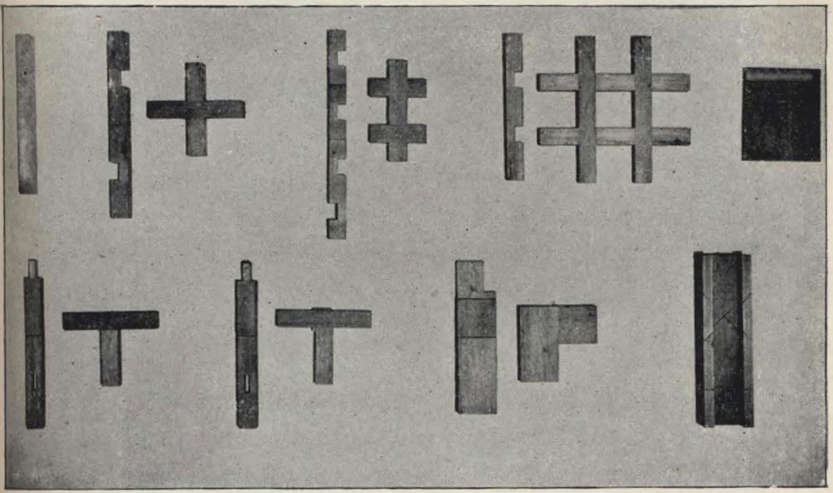
Students in the agricultural department receive instruction in wood-working and forging, and may elect other work with the advice and consent of the committee on studies. Women are given the opportunity to elect wood-carving at any time during the four years' course. During the winter term of three months, the shops are open to receive persons who may wish to enter the college and take up special work of a trade nature in any of the above lines. In addition to this work, these students may take a limited amount of time for the study of any related subject.

The carpenter shop contains benches and tools sufficient to accommodate twenty-four students at one time. The course is designed to give skill and confidence in working the various kinds of wood, and also to impart a fair knowledge of the principles of building and construction. A series of practical lectures upon the art of estimating the cost of various constructions of wood is given to the agricultural students of the Sophomore year. The wood-turning room contains thirteen lathes, each with its complete set of gouges and turning-tools. In the same room are benches for pattern-making, and also power machinery for working wood; such as, circular saw, hand saw, jig saw, surface planer, buzz planer, mortising machine, dowel machine and others. All students take wood-turning, and during the period each has practice under the direct charge of the engineer in care of the shop boiler and engine. This engine is of thirty horse power; and besides furnishing power for the shop, drives a ten K. W. dynamo for lighting the building. The work in pattern-making given to the students in the mechanical department in the Junior year consists of the making of selected pieces to illustrate the principles of shrinkage, drafts, finish, core-box making, built-up work, and the general requirements of pattern-making.

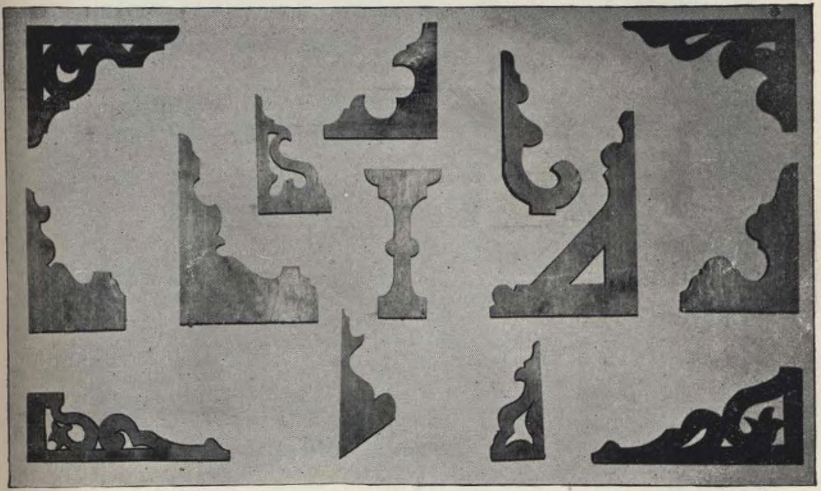
The forge shop will accommodate twelve students at one time. It contains twelve forges and anvils, a stock cutter, a bolt header, a post drill, and is well supplied with all the hammers, tongs, and other forge and anvil tools necessary for complete work. A regular course is followed here as in other lines; and for the students of the agricultural department the work is of such a nature as is found about a farm. The various operations of drawing, bending, upsetting, and welding are taught and applied in the making of such useful pieces as staples, hooks, chains, and iron work for farm tools. The students of the mechanical department follow a similar course but in a direction more suited to the machine shop. Bolts, nuts, machine forgings, chisels, and lathe tools are made, and afterward put to practical use.

Only students in the mechanical department work in the machine shop. The course here is designed to give a sure knowledge of and intelligent practice in the best modern methods of using the various tools; such as, lathes, planers, drills, milling-machines, and grinding machines. A course of hand work at the bench is offered, and includes instruction in chipping, filing, scraping, and finishing. Each student in the machine shop builds a complete machine before finishing the course. Students of former years have made an engine, dynamo, speed lathe, full set of arbors, set of nut arbors, and a variety of other tools.

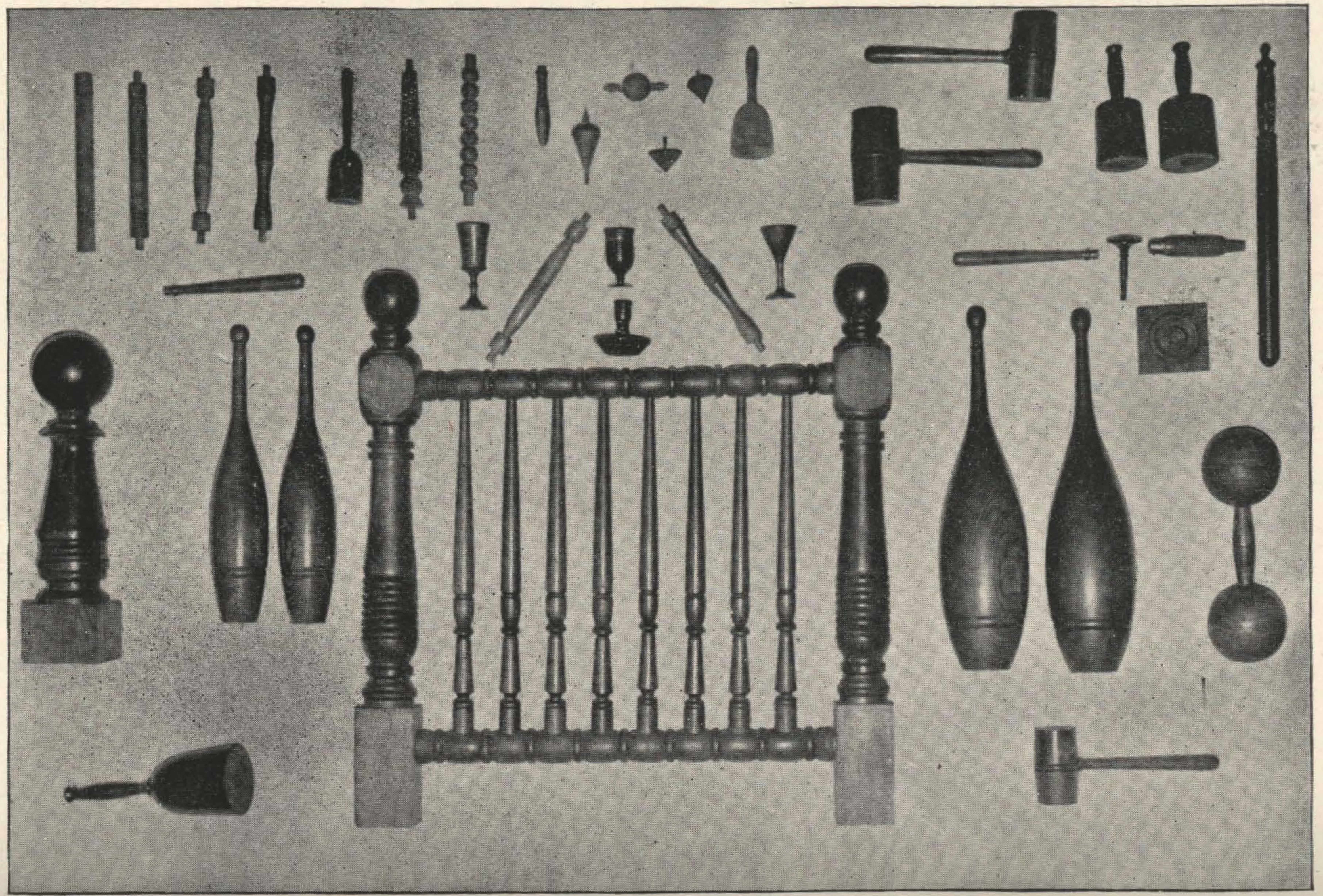
In experimental engineering the students make tests of engines, boilers, pumps, steam gauges, injectors and a hydraulic ram. The strength of materials is investigated theoretically in class under the head of mechanics of materials, and practically in the laboratory by conducting tests upon specimens of wood, iron, steel,



COURSE OF JOINERY.



COURSE IN SCROLL SAWING.



COURSE IN WOOD-TURNING.

brick, stone, cement, boiler plate, etc. In hydraulics, water meters are calibrated and measurements of water made by orifices and wiers. During the spring term of the Senior year the class in mechanical engineering holds semi-weekly conferences; reports are given upon articles in the industrial magazines and journals, and engineering subjects of general interest are discussed. The following are some of the topics considered by the class of '95: types of steam boilers, furnaces, boiler feeders, fuels, lubricants, gas and heat engines, preparation and use of wood, cutting tools for metals, pumping machinery.

Mechanical drawing is taught throughout the Sophomore and Junior years. Students are required to keep notebooks, in which freehand sketches are made from models; and these sketches are afterward worked up into finished drawings. The making of working drawings for some machine completes the course. Practice in tracing and blue printing is given to all students. The course in drawing is designed to aid in the corresponding courses of shop work and not to produce professional draughtsmen.

FREEHAND DRAWING AND MODELING.—Freehand drawing is taught only in the spring and fall terms. Freshmen begin in the spring term with the study of values from objects and still life, continuing in the fall to draw and model from casts, with which the department is well supplied. In the Junior and Senior years students may elect such work as they are prepared to take. Memory sketches of all objects drawn are expected of each student. The sketch class is an interesting feature of the department. This meets for one hour once a week and is conducted by its members, who pose in turn or find a substitute. These time sketches from life, without instruction, are of great benefit to the student, teaching him to note quickly the effect desired. Each student is required to leave at the college a specimen of his work. Modeling is required in the Sophomore year. The library of the studio has a good nucleus of art books.

In the new course to be adopted in 1898, freehand drawing will be required only in the fall term, Freshman year. In addition to the art electives, comprising drawing from life and the cast, painting in oil, pastel and water color, modeling, and the history of art, special work will be arranged for scientific and mechanical students.

MILITARY SCIENCE AND TACTICS.

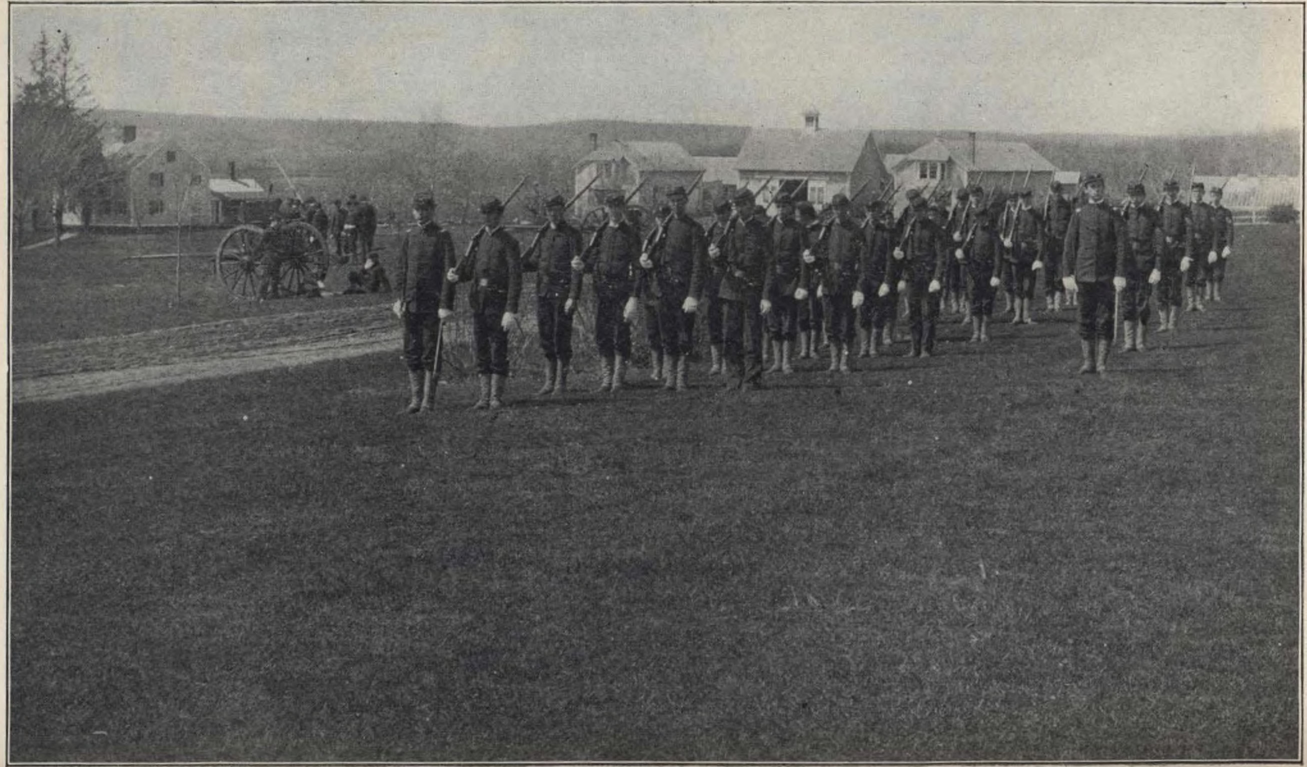
The military department is duly organized under Captain William W. Wotherspoon of the 12th Infantry, who was assigned to duty as professor of military science and tactics, by the president of the United States, by special orders No. 257, from the war department, dated November 1, 1894.

It is the intention of the United States government, in organizing the military department at colleges, to prepare the young men of the country to perform with skill and understanding those military duties which will fall upon them in time of national trouble, and to fit them to take positions as officers in the national guard and volunteers. The course consists of both practical and theoretical instruction in the duties of a soldier.

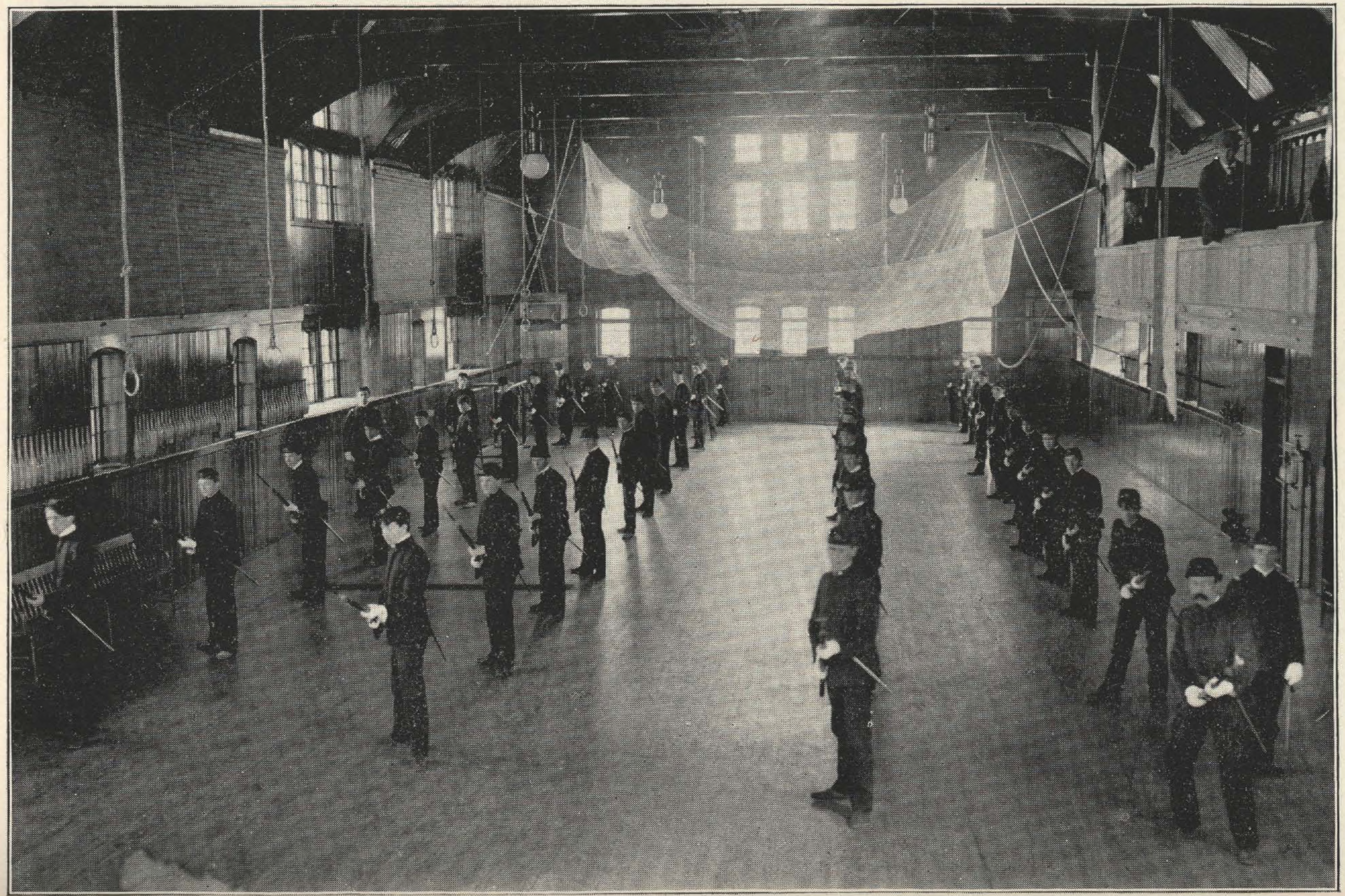
In the practical course, which consists largely of drill, both as infantry and artillery, particular attention is devoted to the physical development of the students. No effort is spared to instill into the cadets a sense of the importance of the work undertaken, and while giving them that quickness and readiness to obey which is so necessary to a soldier, to insure a proper and healthful carriage of the body. All male students in good health are required to take this course, for which purpose they are organized into a battalion of two companies of infantry, from which four batteries of artillery are selected and two classes in military signalling.

The theoretical course, which is entirely by lecture, is taken by the Juniors and Seniors. It consists of logistics, or the movement and camping of troops; organization and tactics; advance and rear guard; out-post duty; reconnaissance; military surveying and map reading; construction of fortifications; the minor operations of war; and the history of campaigns.

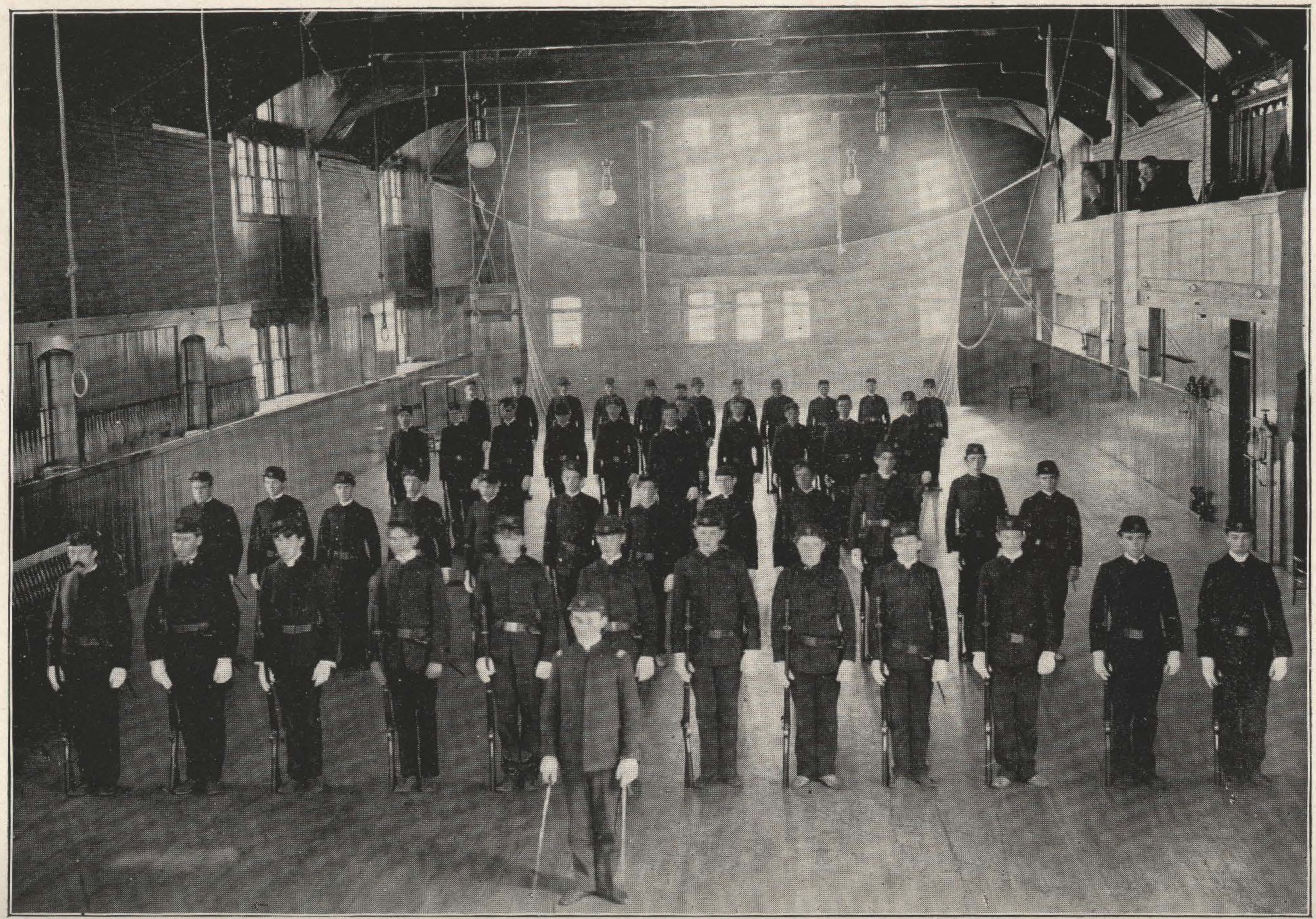
The cadets have been uniformed at a very moderate expense, in



INFANTRY DRILL.



STUDENTS AT DRILL.



STUDENTS IN DRILL HALL.

a neat and handsome uniform of fine blue cloth, consisting of a blouse and trousers cut after the pattern worn by the U. S. naval cadets, with forage caps holding the coat of arms of the State of Rhode Island. This uniform is not only handsome and economical, but with moderate care will last a long time.

The facilities for the military course are excellent. The land about the college is of such a character as to permit of the illustration of many of the minor operations of war. The campus affords an unusually good drill ground; and for indoor drill, during inclement weather, the college has one of the largest drill halls, if not the largest, of any institution of learning in the country.

COURSES OF INSTRUCTION.

The following courses of instruction are offered in the different departments. All studies required of regular students lead to the degree of Bachelor of Science.

CHEMISTRY.

I. General Chemistry, Briefer Course.—Non-metals. Recitations, lectures and laboratory work. *Spring term, Sophomore year;* recitations and lectures, *3 exercises per week;* laboratory work, *1 exercise of 2 hours per week. Required of all candidates for a degree.*

II. General Chemistry.—Metals. Lectures and laboratory work. *Fall term, Junior year; 3 exercises per week. Required of all candidates for a degree.*

III. Qualitative Analysis.—Laboratory work. *Fall term, Junior year; 2 exercises of 2 hours each per week; Winter term, 2 exercises of 3 hours each per week. Required of all candidates for a degree.*

IV. Organic Chemistry.—Lectures, recitations, and laboratory work. *Winter term, Junior year; 4 exercises per week. Required of Agricultural students.*

V. Organic Chemistry.—Lectures and laboratory work. *3 exercises per week. Elective; open to students who have taken course IV.*

VI. Agricultural Chemistry.—Lectures and laboratory work. *Spring term, Junior year ; 3 exercises per week.* Laboratory work. *Fall term, Senior year ; 2 exercises of 3 hours each per week. Required of Agricultural students.*

VII. Quantitative Analysis.—Laboratory work. *Spring term, Junior year ; 2 exercises of 3 hours each per week. Required of Agricultural students.*

VIII. Courses in Theoretical or Sanitary Chemistry or Quantitative Analysis.—Laboratory work. *Throughout the Senior year ; 2 exercises of 3 hours each per week. Elective ; open to students who have taken courses I. and II.*

IX. Dyeing of Textile Fabrics.—*Winter and spring terms, Senior year ; three exercises per week. Elective ; open to students who have taken courses IV. and VII.*

PHYSICS.

I. General Course.—Study of sound and heat, Fall term ; electricity and magnetism, Winter term ; light, mechanics, hydraulics, and pneumatics. *Spring term, Freshman year ;* recitations, *3 exercises per week ;* laboratory work, *1 exercise per week. Required of all candidates for a degree.* In 1898 this course will be required of Sophomores.

II. Advanced Physics.—*Throughout the year ;* recitations, *1 exercise per week ;* laboratory work, *2 exercises per week. Elective ; open to students who have taken course I.*

III. Advanced electrical work.—A course of lectures upon electrical measurements, testing of instruments, dynamos and motors. *Throughout the year.* Lectures, *2 exercises per week ;* laboratory work, *1 exercise per week. Elective; open to students who have taken course II.*

IV. Applied Electricity.—A course of lectures upon the modern practical applications of electricity. *Throughout the year;* lectures, *2 exercises per week;* laboratory work, *1 exercise per week. Elective; open to students who have taken course III.*

V. Elementary Photography.—A course of lectures and recitations upon the optics and chemistry of photography, together with practical photographic work. *Spring term;* lectures, *2 exercises per week;* laboratory work, *2 exercises per week. Elective; open to all students.*

VI. Advanced photography.—A course of lectures on photomicrography, the making of lantern slides and bromide enlargements, and the manipulation of the optical lantern. *Spring term;* lectures, *2 exercises per week;* laboratory work, *2 exercises per week. Elective; open to students who have taken course V.*

PHYSIOGRAPHY.

Tarr's Physical Geography, with required reading from reference books. Laboratory work and excursions. *Fall term, Freshman year; 4 exercises per week. Required of all candidates for a degree.*

GEOLOGY.

Agricultural Geology. Lectures and recitations. *Winter term of Senior year; 2 exercises per week. Required of Agricultural students, elective for mechanical students.*

BOTANY.

I. Biology of Plants.—Comparative morphology and physiology are emphasized rather than the details of classification. Laboratory, reading and lectures. *Winter and Spring terms, Sophomore year; 4 exercises of two hours each per week. Required of Agricultural students.*

Beginning with the class of 1902 this course, somewhat elaborated, will be given in the Freshman year, winter and spring terms for the Agricultural students, and will continue through the following fall term for the Chemical and Biological students.

II. Systematic and Economic.—Seed-plants of economic importance are studied from fresh and preserved material. Special topics in physiology. *Fall term, Junior year;* recitation, *1 exercise per week;* laboratory work, *2 exercises of 2 hours each per week. Required of Agricultural students.*

Beginning with the class of 1902, this course will be given in the fall term of the Sophomore year.

III. Fungi.—A study of fungi with special reference to parasitic forms of economic importance. Laboratory, reading and lectures. *Elective; open to students who have taken courses I. and II. or courses I. and V. Hours arranged with instructor.*

IV. Histology.—Laboratory, reading and lectures. The laboratory work includes methods of imbedding, sectioning, staining, and mounting. *Elective; open to students who have taken course I. Hours arranged with instructor.*

V. A study of the Spring Flora of Kingston, with practice in the identification of species. *Spring term;* field and laboratory work, *1 exercise per week. Elective; open to students who have taken course I.*

PHYSIOLOGY.

Advanced Course. — Comparative Anatomy and Physiology. Presupposes knowledge of chemistry and animal biology. Instruction demonstrative, comparative, theoretical. *Fall term, Senior year; 4 exercises per week. Winter term; 3 exercises per week. Required of Agricultural students.*

ZOÖLOGY.

I. Animal Biology.—*Spring term, Junior year; 3 exercises per week. Required of Agricultural students.*

II. Zoölogy.—*Fall term, Senior year; 3 exercises per week. Elective; open to students who have taken course I.*

III. Comparative Normal Histology.—*Elective. Hours arranged with instructor.*

IV. Morphology of the Invertebrated Animals.—*Fall term. Elective. Hours arranged with instructor.*

V. Comparative Osteology of the Vertebrated Animals.—*Winter term. Elective. Hours arranged with instructor.*

V. Comparative Embryology.—*Spring term. Elective. Hours arranged with instructor.*

VETERINARY SCIENCE.

Veterinary Science.—Theory of practice. Based on courses of comparative anatomy and physiology. *Spring term, Senior year; 4 exercises per week. Required of Agricultural students.*

PSYCHOLOGY.

Elementary Course.—Lectures, recitations, simple laboratory experiments. *Spring term, Senior year; 3 exercises per week. Elective.*

AGRICULTURE.

I. Introduction.--Definition of terms; origin and necessity of agriculture; relations of agriculture to other industries; agriculture as an occupation; education for agriculture; the atmosphere and sunshine in relation to agriculture; plant and animal life in agriculture. *Spring term, Freshman year; 2 exercises per week. Required of Agricultural students.*

II. Soils.—*The origin, formation, and deposition of soils are studied under physiography; the composition, mechanical and chemical analysis under agricultural chemistry; the physical properties* *and relations under soil-physics.* Agricultural Soils.—Definition; function; variation; classification; adaptation; location; examination; faults; improvement and preparation; clearing land; grading; mixing soils; paring and burning; reclaiming land; irrigation. *Fall term, Sophomore year; 2 exercises per week for one-half term. Required of Agricultural students.*

III. Land Drainage (Waring).—Sources of water; necessity of drainage; kinds of drains; action of drains; planning system of drainage; drain tiles; construction and care of drains; cost and value of drains; sanitary effects of drainage. *Fall term, Sophomore year; 2 exercises per week for one-half term. Required of Agricultural students.*

IV. Agricultural Apparatus and Constructions.—Farm tools; implements; machines and vehicles; farm buildings; fences; roads and bridges—arrangement, construction, care and maintenance. *Winter term, Sophomore year; 3 exercises per week. Required of Agricultural students.*

V. Farm fertilization.—Introduction; classification of manures, atmospheric, mineral and organic; manurial sources of potash, lime, magnesia, soda, iron, phosphates and nitrogen salts; stable-manure, composition and management; animal manures; liquid manure; farm sewage; guanos; fish fertilizers; animal refuse; peat; green manuring; sea-weeds; vegetable refuse and by-products; composts; divisors for manures; application and action of manures; valuation of manures. *Spring term, Sophomore year; 2 exercises per week. Required of Agricultural students.*

VI. Field and Garden Crops.—Balancing of farm; rotation of crops; grass-land; wood-land; tillage-land; preparation of land, planting, cultivating, harvesting, storing and disposal of crops; special consideration of the hay crop, fodder crops, Indian corn, potatoes, root crops, field and garden vegetables; weeds. *Fall term, Junior year; 3 exercises per week. Required of Agricultural students.*

VII. Breeds of Farm Animals (Curtis).—Origin, history, characteristics and adaptability of the leading breeds of the horse, neat cattle, sheep, swine and poultry; scoring; tracing pedigrees; breeders' associations. *Fall term, Senior year; 3 exercises per week. Elective.*

VIII. Live Stock Breeding. — The principles of breeding; hereditary; atavism; correlation; variation; fecundity; in-breeding; cross-breeding; relative influence of parents; sex; pedigree; form; selection; the breeding, care and management of the horse, neat cattle, sheep, swine and poultry. *Fall term, Senior year; 3 exercises per week. Elective.*

IX. History of Agriculture.—Agriculture in relation to civilization; fisher and hunter-folk; nomads; tillers of the soil; development of tillage; history of the plow; crop rotation; irrigation; fertilization; general and special farming; agricultural education; agricultural experimentation; evolution of farming implements; the farm and the farmer to-day. *Fall term, Senior year; 2 exercises per week. Elective by special arrangement.*

X. Feeding of Farm Animals.—Principles of rational feeding; animal body, composition, processes of digestion, assimilation, and excrementation; feeding stuffs, composition and digestibility; nutrients; feeding standards; formulating rations; selection of feeding stuffs; preparation of food; methods of feeding; utility of shelter; special feeding of horse, cow, sheep, swine and poultry. *Winter term, Senior year; 3 exercises per week. Elective.*

XI. Dairy Husbandry.—Breeds and breeding of dairy cattle; barns and dairy buildings; milk production, composition; management, æration, pasteurization, sterilization, testing, preservation, transportation and marketing; creaming; butter-making; cheese-making; milk-preservation, condensed milk, milk-sugar, etc.; milk-preparation for infants and invalids; dairy bacteriology. *Winter term, Senior year; 3 exercises per week. Elective.*

XII. Poultry Culture.—Domestic fowls—kinds, breeds, selection and breeding; buildings—location and arrangement, construction and furnishing, ventilation, yards and parks; foods and feeding, care and management, production of eggs and flesh, fattening; dressing and marketing; incubation, natural and artificial; rearing; diseases and enemies; caponizing; records and accounts; special management of turkeys, geese, ducks, and pigeons. *Winter term, Senior year; 2 exercises per week. Elective.*

XIII. Agricultural Economics.—The mutual relations of agriculture and the body politic; the position of agriculture; independence of agriculture; state intervention; legislation; tariff; bounties; taxation; insurance; credit; rewards; census; moral and social aspects of agriculture; division and distribution of farms; size of farms; extensive and intensive farming; ownership of land; inheritance; nationalization of land; government lands; colonization; agricultural laborers, machinery, experimentation; education; association; coöperation; press; agricultural improvement; reclamation and irrigation of land; diversification of products. *Winter term, Senior year; 2 exercises per week. Elective by special arrangement for students who have taken Agriculture VIII.*

XIV. Agricultural and horticultural literature.—An opportunity to read and study in any special line of agriculture or horticulture for which the student is prepared. Examination and consideration of the reports and bulletins of the agricultural experiment stations. *Winter term, Senior year; 2 exercises per week. Elective by special arrangement.*

XV. Farm Management.—Introduction and definitions; farming requisites; farm production and market relations; capital, permanent, floating and perishable, distribution in land, buildings, apparatus, live stock and supplies; labor and power; machinery; kind of farming; size of farm; system of farming; ownership or rental of farm; maintenance and management; returns and results; inventory and balancing of accounts. *Spring term, Senior year; 5 exercises per week. Elective.*

XVI. Farm Accounts and Records. — The principles and methods of book-keeping in their application to the keeping of farm accounts; diary; note-book; calendar; records and accounts of special departments, crops, fields and animals; calculations, estimates, and valuations; inventories. *Spring term, Senior year; 1 exercise per week. Elective.*

XVII. Farm Law.—The legal rights and liabilities of farmers; purchase and sale of farm, forms of deeds; rental of farm, terms of lease; boundaries and fences; overhanging trees; water rights and drainage; ways over the farm; rights in the highway; roadsides; live stock; dogs; game; trespass; theft; fires; insurance; employing laborers; liability of employer and employed; contracts; mortgages; notes; taxes; exchange, sale and purchase; contagious diseases of live stock and crops; *Spring term, Senior year; 1 exercise per week. Elective by special arrangement.*

XVIII. Apiculture.—A study of the habits, care, breeding, and management of the honey-bee, with practical work in the apiary. *Spring term, Senior year; 1 exercise per week. Elective by special arrangement.*

XIX. Agricultural Debate.—Discussion in the form of regular parliamentary debates upon leading agricultural questions. *Spring term, Senior year; 1 exercise per week. Elective.*

XX. Agricultural Experimentation.—A study of the objects, principles, and methods of agricultural experimentation. Opportunity will be given for practical participation in the work of the Experiment Station to those students who arrange to continue this work through the experimental season. *Spring term, Senior year; 2 exercises per week. Elective by special arrangement.*

XXI. Agriculture (Storer).—Relations of heat, air, and water to the soil; influence of soil, atmosphere, heat, light, and water upon the growth of plants; tillage and implements; natural sources of plant food; action of manures; special manures; phosphatic manures; nitrogenous compounds; green manuring; seaweeds: humus; farm-yard manure; composts; modes of applying manures; night soil; history of the use of manures; potash, magnesium, lime and soda as manures; theory of rotation; irrigation; sewage; growth of crops; cereals; hay and hay-making; pastures; ensilage. Text-book. Classes of 1899, 1900, 1901. *Winter term, Junior year; 5 exercises per week: Spring term, Junior year; 2 exercises per week. Required of Agricultural students.*

XXII. Fertilizers.—Study of the composition of the various agricultural chemicals as sold in the markets; calculation of formulas for special crops; calculation and value of various home-made fertilizers. Lectures and classroom calculations. Classes of 1899, 1900, 1901. *Spring term, Senior year; 1 exercise per week. Required of Agricultural students.*

HORTICULTURE.

I. Market-gardening and Greenhouse Culture.—Location, soil, preparation and equipment; construction, maintenance and management of hot-beds, cold frames, forcing pits, and greenhouses; market-garden and greenhouse crops. *Winter term, Junior year; 3 exercises per week. Required of Agricultural students.*

II. Plant Breeding.—Heredity; variation; origin and improvement of varieties; individuality; characteristics; selection; culture; close breeding; cross-breeding; pollination, natural and artificial; special breeding of potato, maize, beet, cucumber, squash, strawberry, raspberry, etc. *Winter term, Junior year; 1 exercise per week. Elective.*

III. Forestry.—Relation to climate, shelter, water-shed and timber production; trees as a farm crop; nut-bearing trees; planting, care, and management of forest trees; cutting and curing;

wind-breaks, groves, and shelter belts; forest fires; diseases and enemies of forest trees; arbor day. *Winter term, Junior year; 2 exercises per week. Elective.*

IV. Pomology (Bailey).—Principles of fruit culture:—introduction; fruit lands:—location; tillage; fertilizing; planting; care; diseases, insects, and spraying; harvesting and marketing of fruits. *Spring term, Junior year; 3 exercises per week. Required of Agricultural students.*

V. Ornamental Gardening (Long).—Requirements of ornamental gardening; materials; arrangement; construction and maintenance of ornamental gardens; improving the surroundings of rural homes; the planting of trees and shrubbery; lawns; village improvement. *Spring term, Junior year; 3 exercises per week for one-half term. Required of Agricultural students.*

VI. Floriculture.—House plants; selection, care, and arrangement; conservatories; commercial floriculture; garden, field and greenhouse culture of flowering plants; bulb culture. *Spring term, Junior year; 3 exercises per week for one-half term. Required of Agricultural students.*

ENGLISH.

I. Elementary Course.—English grammar. Composition. Study of representative American authors. *Fall term; 5 exercises per week. Required of all students in the preparatory department.*

II. Lockwood's Lessons in English.—Continued study of American literature. Composition. *Winter term, 5 exercises per week; Spring term, 5 exercises per week. Required of all students in the preparatory department.*

III. Rhetoric.—Text-book study and practical application of rhetorical principles in illustrative readings. Fortnightly themes.

2 exercises per week throughout the Freshman year. Required of all candidates for a degree. In 1898 this course will be required of the Sophomores during the Fall and Winter terms.

IV. General English Literature.—Topical study. Essays and collateral reading required. *4 exercises per week; Winter and Spring terms, Junior year. Required of all candidates for a degree.*

V. Special English Literature.—Study of special periods and authors. *2 exercises per week throughout the year. Elective; open to students who have taken courses I.–IV. or their equivalent.*

VI. Historical English.—*2 exercises per week throughout the year. Elective; open to students who have taken courses I.–V. or their equivalent.*

VII. Argumentation.—*2 exercises per week. Fall term. Open to students who have taken courses I.–IV. or their equivalent.*

VIII. Special Work in Themes.—*Throughout the year. Elective; open to students who have taken courses I.–IV. or their equivalent.*

GERMAN.

I. Elementary Course.—Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout the Freshman year; 5 exercises per week. Required of all candidates for a degree who do not offer French.* In 1898 and 1899, this course will be required of all Juniors.

II. Reading of intermediate texts, composition, conversation. —*Fall term, Sophomore year; 3 exercises per week. Open to students who have taken course I. or its equivalent, and required of all candidates for a degree who do not offer French.*

III. German Classics.—History of German literature. *Winter and Spring terms; 3 exercises per week. Open to students who have taken courses I. and II.*

IV. Scientific German.— *Winter and Spring terms ; 3 exercises per week. Open to students who have taken courses I.–II. or their equivalent. Candidates for a degree who do not offer French will be required to take either III. or IV.*

V. Sight-Reading.—*Throughout the year ; 1 exercise per week. Elective ; open to students who have taken courses I.–III. or their equivalent.*

VI. Goethe's Meisterwerke (Bernhardt).—*Fall term, 3 exercises per week. Elective ; open to those who have taken courses I.–III. or their equivalent.*

VII. Study of Schiller or Heine.— *Winter term ; 3 exercises per week. Elective ; open to those who have taken courses I.–III. or their equivalent.*

VIII. Study of Freytag.—*Summer term ; 3 exercises per week. Elective ; open to those who have taken courses I.–III. or their equivalent..*

FRENCH.

I. Elementary Course. — Grammar, dictation, conversation, reading of easy prose and poetry. *Throughout the year ; 5 exercises per week ; Required of all students in the preparatory department and of all Freshmen not electing German and not offering French for admission.* In 1898 this course will be required of all Sophomores.

II. Reading of intermediate texts, composition, conversation.—*Fall and Winter terms, Sophomore year ; 3 exercises per week. Required of all candidates for a degree who do not offer German.*

III. Scientific French.—*Spring term, Sophomore year ; 3 exercises per week. Required of all candidates for a degree who do not offer German.*

IV. French Classics. History of French literature. *Throughout the year ; 3 exercises per week. Elective ; open to students who have taken courses I.–III.*

V. Sight-Reading.—*Throughout the year ; 1 exercise per week. Elective ; open to students who have taken courses I.–III.*

VI. Lyrics of the Nineteenth Century.—*2 exercises per week. Fall term. Elective ; open to those who have taken courses I.–III. or their equivalent.*

VII. Study of Victor Hugo.— *Winter term, 2 exercises per week. Elective ; open to those who have taken courses I.–III. or their equivalent.*

LATIN.

I. Beginner's Latin Book. Grammar. *Throughout the year ; 3 exercises per week. Elective.*

II. Selections from various Latin authors or Cæsar.—*Throughout the year ; 3 exercises per week. Elective.*

For further information, see Departments of Instruction p. —

EXPRESSION.

I. Elementary work in reading.—Elements of speech, articulation, and sight reading. *Throughout the Freshman year; 1 exercise per week. Elective.*

II. Reading.—The cultivation of ease and naturalness. Study of narrative poetry and prose. *Throughout the Sophomore year ; 1 exercise per week. Elective.*

III. Reading and recitations.—Study of various forms of poetry and prose. Extemporaneous speaking required during the Spring term. *Throughout the Junior year ; 1 exercise per week. Elective.*

IV. Reading.—Shakespeare. Two extemporaneous speeches and one original oration required each term. One public debate during the year. *Throughout the Senior year; 1 exercise per week. Elective.*

POLITICAL SCIENCE.

I. Science of Government.—Town, County, State, and United States. Their origin, development, and practices. Critical analysis of the Constitution of the United States. Lectures, recitations and discussions. *Fall term, Senior year; 4 exercises per week. Elective.*

II. Political Economy.—Elementary course. Based on Walker's Briefer Course, and Andrews's Institutes of Economics. Lectures, recitations, discussions, readings, original problems, citations from the daily press, and essays. *Winter term, Senior year; 4 exercises per week. Elective.*

MATHEMATICS.

I. Algebra (Wells).—The fundamental operations, addition, subtraction, multiplication, division, of algebraic quantities; factoring and its applications; the solution of simple equations with one or more unknown quantities; involution; evolution; the theory of exponents; the solution of radical and quadratic equations; arithmetical and geometrical progression; the binomial theorem. *Preparatory department; 5 exercises per week throughout the year.*

II. Plane Geometry (Wells).—Rectilinear figures; the circle; measurements of angles; the theory of proportion; similar figures; regular polygons; areas of polygons; the measurement of the circle; original demonstrations. *Preparatory department; Fall and Winter terms; 5 exercises per week.* In 1898 this course will be required of Sophomores.

III. College Algebra (Taylor),—The theory of limits; differentiation; development of functions in series; permutations and combinations; probability. *Fall term, Freshman year; 4 exercises per week. Required of all candidates for a degree.* Elective for classes from 1899–1901, inclusive.

IV. Plane Trigonometry (Locke-Miller).—The derivation of the fundamental formulas; logarithms; the solution of right and oblique triangles; practical problems. *Winter term, Freshman year; 3 exercises per week. Required of all candidates for a degree.* In 1899 this course will be required of Sophomores.

V. Solid Geometry (Wells).—Lines and planes in space; diedral angles; polyhedral angles; polyhedrons; the cylinder, cone and sphere; measurement of the cylinder, cone and sphere; numerical examples and original demonstrations. *Spring term, Freshman year; 3 exercises per week. Required of all candidates for a degree.* In 1899 this course will be required of Mechanical Sophomores.

VI. Analytical Geometry (Loney).—Coördinate systems; the point; the line; relation between different coördinate systems; the equation of the first degree, the straight line; the equation of the second degree, the conic sections; higher plane curves. *Fall and Winter terms, Junior year; 4 exercises per week. Required of students in the Mechanical, Physical, and Mathematical courses.*

VII. Calculus (Osborne).—The differentiation of algebraic, trigonometric, logarithmic, exponential, and anti-trigonometric functions. Integration of fundamental forms; definite integrals; applications to geometry and mechanics; successive differentiation; successive integration with applications; evaluation of indeterminate forms; the development of functions in series; maxima and minima; change of the independent variable; integration of rational fractions; integration by rationalization; integration by parts and by series; curve tracing. *Winter and Spring terms, Junior year; and Fall term Senior year; 3 exercises per week.*

Required of students in the Mechanical, Physical, and Mathematical courses.

VIII. Curve tracing.—Lecture course. The construction and elementary properties of simple plane curves; symmetry; diameters; limits; asymptotes. *Fall term; 1 exercise per week. Elective; open to students who have completed courses III. and IV.*

IX. Synthetic Geometry (Dupuis).—The point, line, and circle; comparison and measurement of areas; proportion amongst line segments; collinearity; inversion; anharmonic division; homography. *Winter term; 3 exercises per week. Elective; open to students who have completed courses III. and IV.*

X. Spherical and Higher Plane Trigonometry (Chauvenet).—The derivation and application of the fundamental formulas; trigonometric series; the construction of trigonometric tables. *Spring term; 3 exercises per week. Elective; open to students who have completed courses III., IV., and V.*

XI. Solid Analytical Geometry (Smith).—Theorems on the plane and the surfaces of the second degree. *Winter term; 3 exercises per week. Open to students who have completed course VI.*

XII. Advanced Calculus (Byerly).—An extension of course VII., including a further discussion of definite integrals; imaginaries, length of curves, areas, volumes, and the elements of elliptic integrals. *Spring term; 3 exercises per week. Elective; open to students who have completed course VII.*

XIII. Analytical Mechanics.—*Fall term; 3 exercises per week. Elective; open to students who have completed course VII.*
(Withdrawn for the year 1898–9.)

XIV. Courses in Projective Geometry, Modern Analytical Geometry, Differential Equations, Theory of Equations, Theory of Functions, will be arranged as demand for them arises.
(Withdrawn for the year 1898–9.)

ASTRONOMY.

I. Physical Astronomy.—Lecture course, illustrated with copious lantern slides, observations with a four-inch telescope, and laboratory work with the sun spectrum and the spark spectrum, sufficient to give an insight into modern methods of astronomical work. *Spring term ; 3 exercises per week. Elective ; open to students who have completed Mathematics III., IV., and V.*
(Withdrawn for the year 1898–9.)

II. Practical Astronomy.—The use of instruments ; the determination of time, of latitude, of longitude. *Spring term ; 3 exercises per week. Elective ; open to students who have completed Mathematics VII. and X.*
(Withdrawn for the year 1898–9.)

CIVIL ENGINEERING.

I. Plane Surveying (Carhart).—Elementary course, field work, recitation and plotting. Use of compass, transit and levels ; adjustment of instruments ; stadia surveying. *Spring term, Sophomore year ; 1 exercise per week of classroom work, 2 exercises of three hours each of field work per week. Required of Agricultural students.*

II. Road Construction and Leveling (Spalding).—Location and construction of roads ; mechanical structures ; earth, gravel, broken stone, paved and macadam roads. *Fall term, Junior year ; 3 exercises of text-book work and 1 exercise of three hours of field work per week. Required of students in the Agricultural course.*

III. Civil Engineering.—A continuation of course II., embracing land, topographic and railroad surveying, the study of the use of engineer's tables, and practice in overseeing under-classmen beginning the subject. *Fall and Spring term ; 2 exercises of* *two hours each week. Elective; open to students who have completed course II.*

MECHANICS.

I. Strength of Materials (Merriman).—Strength of wood, steel, alloys, stone, brick and cements. *Spring term, Junior year;* recitations, *3 exercises per week*, laboratory work, *1 exercise of 2 hours per week. Required of Mechanical students.*

II. Mechanism (Lectures).—Rectilinear motion; rotary motion; transmission of motion. *Spring term, Junior year; 2 exercises per week. Required of Mechanical students.*

III. Mechanics of Engineering (Church).—Bodies in equilibrium and in motion; work and power; friction of rest and motion; strength of simple beams, continuous beams, pipes and columns, arches. Recitations. *Fall term, Senior year; 5 exercises per week; Winter term, Senior year; 4 exercises per week.* Graphic statics, hydraulics and water-wheels. *Spring term, Senior year; 5 exercises per week. Required of Mechanical students.*

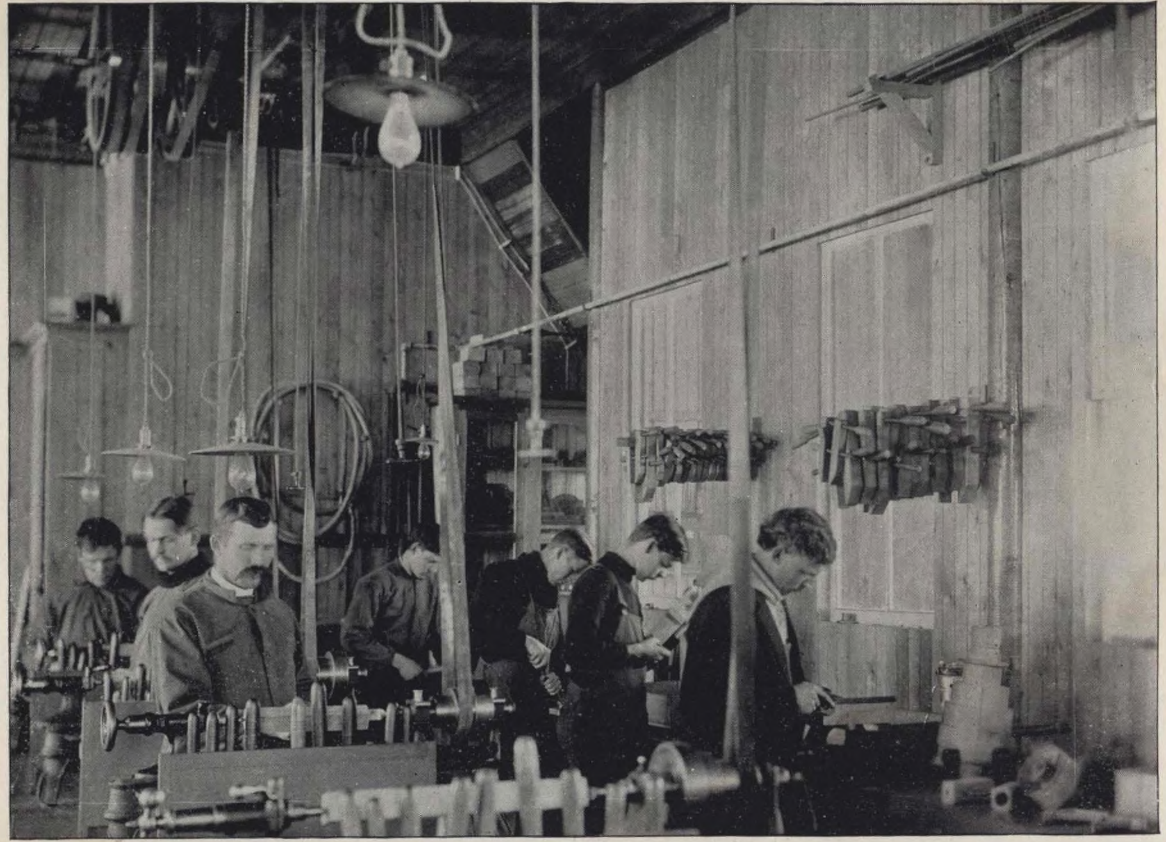
IV. Steam Engineering (Kinealy).—Study of steam and its properties; simple and compound engines; steam boilers. *Fall term, Senior year; 3 exercises per week. Elective.*

V. Metallurgy (Huntington).—Study of the manufacture of cast iron, wrought iron, and steel; rolling-mill machinery; metallurgy of copper, tin, zinc, and silver; alloys. *Winter term, Senior year; 3 exercises per week. Elective.*

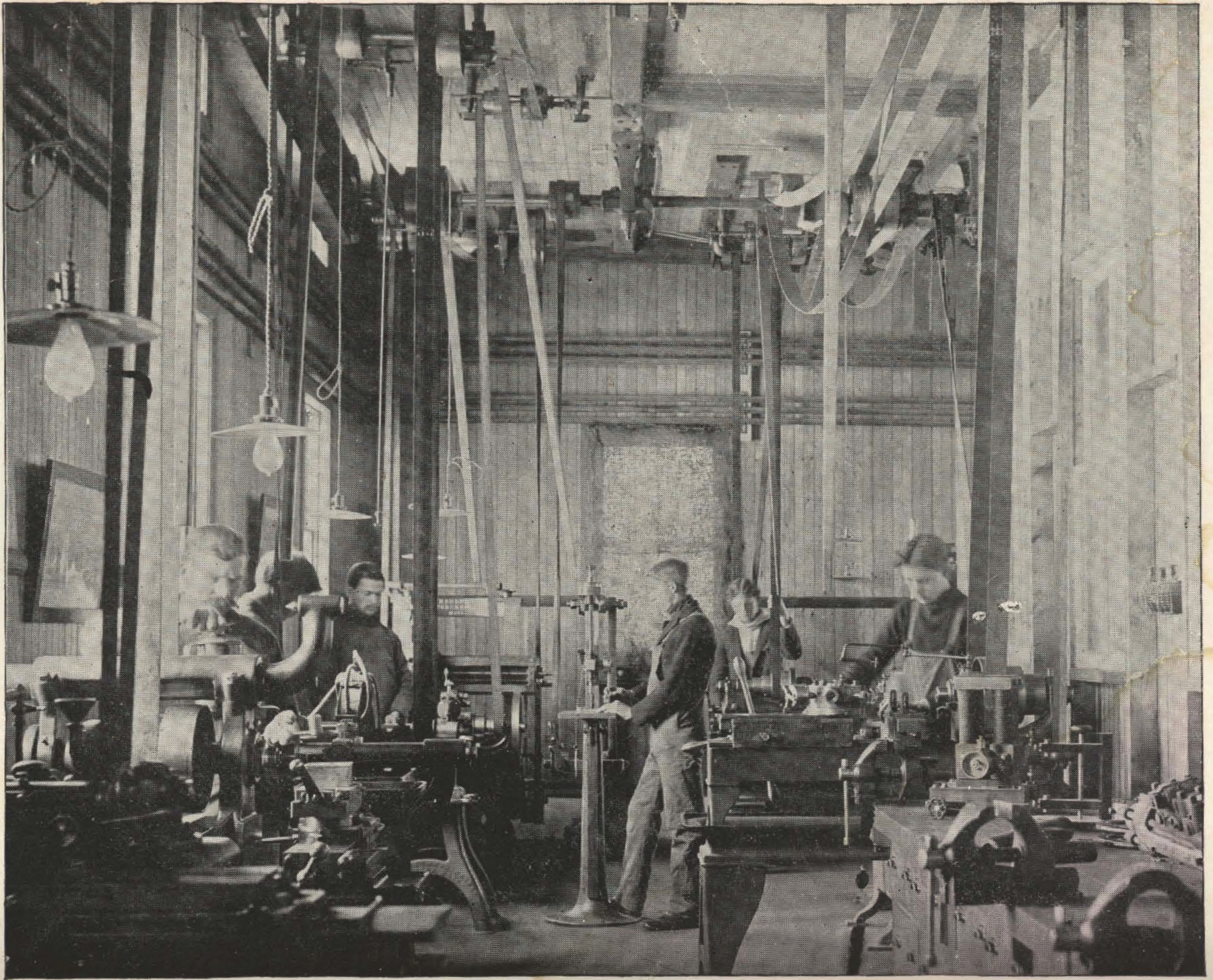
VI. Mechanical Drawing.—*Winter term, Sophomore year; 1 exercise of 2 hours per week. Required of Agricultural students.*

VII. Mechanical Drawing.—*Spring term, Freshman year; 1 exercise of 2 hours per week. Required of Agricultural students.*

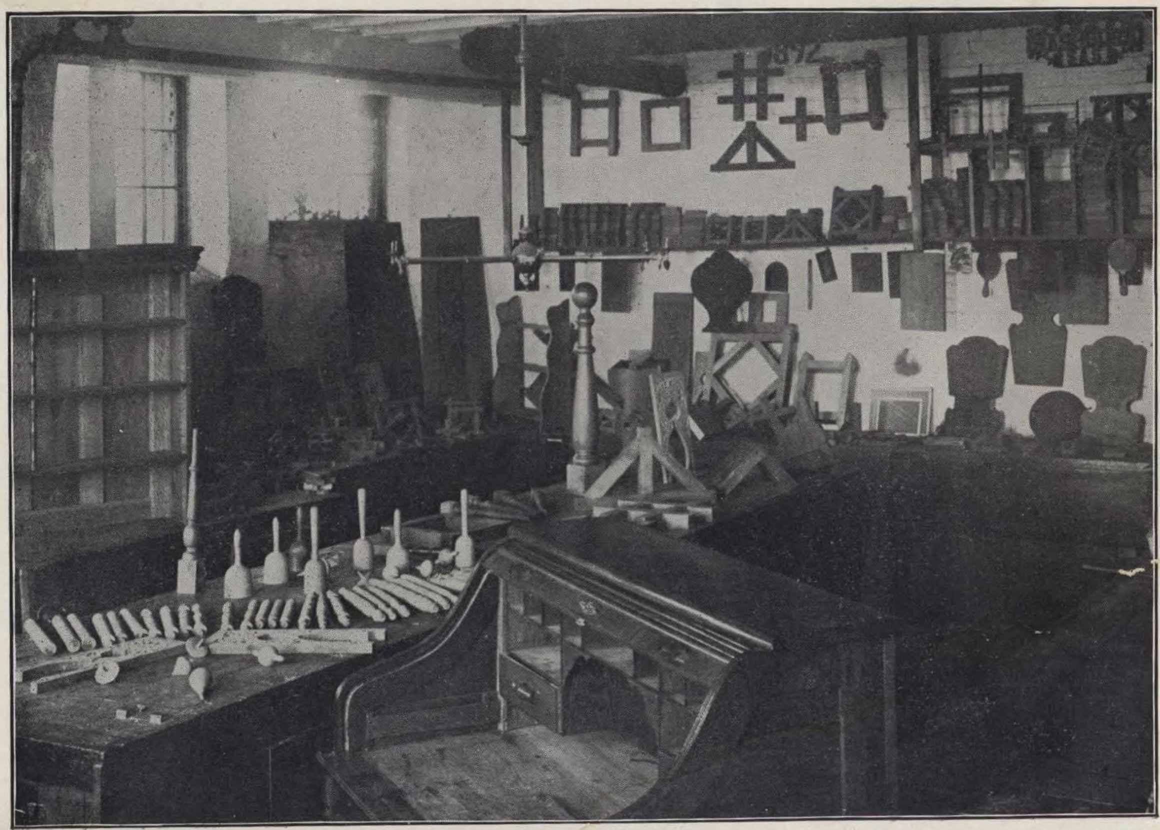
VIII. Mechanical Drawing (Anthony).—*Throughout the Sopho-*



PATTERN-MAKING.



MACHINE SHOP.



THE CARPENTER SHOP.

more year ; 2 exercises of 2 hours each per week. Required of Mechanical students.

IX. Mechanical Drawing.—*Throughout the Junior year ; 2 exercises of two hours per week. Required of Mechanical students.*

X. Mechanical Drawing.—Machine drawing and design. *Fall and Winter terms, Senior year ; 1 exercise of 3 hours per week. Required of Mechanical students.*

XI. Mechanical Drawing.—*Winter term, Freshman year ; 1 exercise of 2 hours per week. Spring term, Freshman year ; 2 exercises of 2 hours per week. Required of Mechanical students.*

XII. Descriptive Geometry (Faunce).—Notation and elementary principles ; problems on the point, line and plane ; problems relating to the cylinder, cone and double curved surface of revolution ; intersection and development of planes and solids ; practical problems. *Fall term, Junior year ; 3 exercises per week. Required of Mechanical students.*

XIII. Wood-working.—Use of tools, bench work and carpentering. *Winter term, Freshman year ; 2 exercises of 3 hours each per week. Required of all Agricultural students.*

XIV. Wood-working.—*Winter term, Freshman year ; 2 exercises of 3 hours each and 1 exercise of 2 hours per week. Required of Mechanical students.*

XV. Wood-turning.—*Fall term, Sophomore year ;* shop-work, *2 exercises of 3 hours each per week. Required of Mechanical students.*

XVI. Pattern-making.—Principles of moulding and casting. *Spring term, Sophomore year ;* shop-work, *1 exercise of 3 hours per week. Required of Mechanical students.*

XVII. Wood-turning and Pattern-making.—*Spring term,* *Freshman year ; 2 exercises of 3 hours each and 1 exercise of 2 hours per week. Required of Mechanical students.*

XVIII. Forging.—*Fall term, Sophomore year ;* shop-work, *1 exercise of 3 hours per week. Required of Agricultural students.*

XIX. Iron-work.—Forging, drawing, bending, welding and tool-dressing. *Winter term, Sophomore year ;* shop-work, *2 exercises of 3 hours each per week. Required of Mechanical students.*

XX. Constructions, and Estimates of Cost.—*Winter term, Sophomore year ;* shop-work and lectures, *2 exercises of 2 hours each per week. Required of Agricultural students.*

XXI. Wood-carving.—Care and use of tools, geometrical motives, diaper patterns, incised carving, flat and curved surface carving, historic ornament, low relief and high relief. *Elective throughout the course ; 1 exercise of 3 hours per week.*

XXII. Machine-shop Practice.—*Fall term, Junior year ;* shop-work, *2 exercises of 3 hours per week. Required of Mechanical students.*

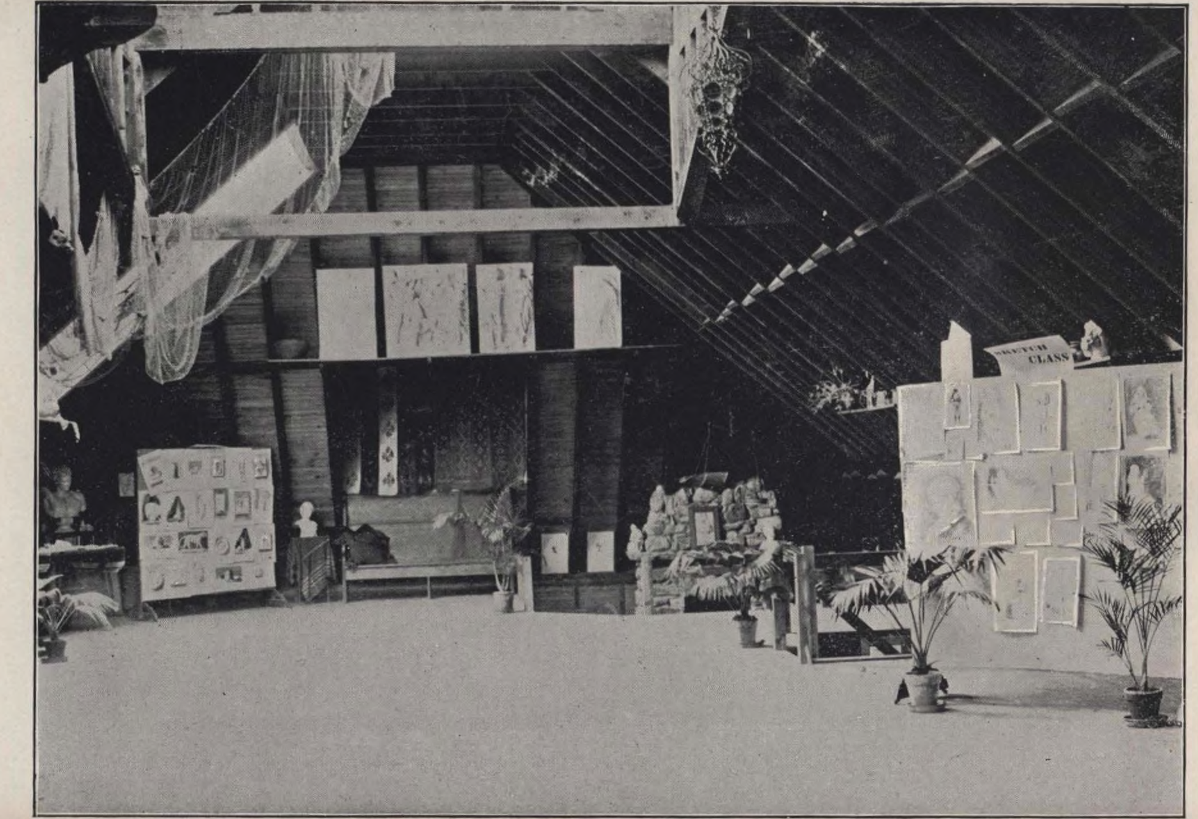
XXIII. Machine-shop Practice.—*Winter and Spring terms, Junior year ; 1 exercise of 3 hours per week. Required of Mechanical students.*

XXIV. Machine Construction.—*Throughout the Senior year ;* shop-work, *2 exercises of 3 hours each per week. Required of Mechanical students.*

XXV. Engineering Conferences.—Subjects chosen by the class. *Spring term, Senior year ; 2 exercises per week. Required of Mechanical students.*

DRAWING AND MODELING.

I. Freehand Drawing.—Drawing from objects. Memory sketches required. *Fall term, Freshman year ; 1 exercise of 2 hours per week. Required of all candidates for a degree.*



THE STUDIO.

II.—III. Drawing in charcoal from still life and the cast.—*Fall term, Sophomore year; 1 exercise of 2 hours per week. Required of all candidates for a degree. Spring term, Sophomore year; 1 exercise of 2 hours per week. Elective; open to students who have taken course I.*

IV. Drawing from life or the cast, and painting in oil, pastel, or water color.—*Fall and Spring terms, Junior and Senior years; 2 exercises of 2 hours each per week. Elective; open to students who have taken courses I. and II.*

V. Sketch Class.—Rapid sketching from life. *1 exercise of 1 hour per week. Elective throughout the course. In the Junior and Senior years 2 exercises per week may be taken.*

VI. Modeling from objects and casts.—*Fall term, Junior and Senior years. Elective; open to all courses.*

VII. History of Art.—Reading and lectures. *Spring term, Junior and Senior years; 1 exercise of 1 hour per week. Elective; open to all courses.*

COURSE OF STUDY

OF THE

R. I. College of Agriculture and Mechanic Arts, for the Classes of 1899 to 1901, inclusive.

SOPHOMORE YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.	**Mechanical Course.**	Exercises per week.
Physics, I	4	Physics, I.	4
Agriculture, VI	2	English, III	2
Agriculture, VII	3	French, I	3
English, III.	2	Mathematics, II	5
French, I	3	Mechanics, VIII	2
Mathematics, II.	5	Mechanics, XV	2
Mechanics, XVIII	1	Drawing, II	1
Drawing, II.	1	Military Drill and Tactics, I	3
Modeling, IV	1		
Military Drill and Tactics, I	3		

***Electives**—Latin I., II. Mathematics, VII. Mechanics, XXI. Expression, II.

WINTER TERM.

Physics, I	4	Physics, I	4
Botany, I	4	English, III	2
English, III	2	French, I	3
French, I.	3	Mathematics, IV	3
Mathematics, IV	3	Mechanics, VIII	2
Mechanics, VI	1	Mechanics, XIX	2
Mechanics, XX	2	Military Drill and Tactics, I	3
Military Drill and Tactics, I	3		

Electives—Latin, I., II. Mechanics, XXI. Expression, II. Mathematics, VIII.

SPRING TERM.

Chemistry, I	4	Chemistry, I	4
Physics, I	4	Physics, I	4
Botany, I	4	French, I	3
French, I	3	Mathematics, V	3
Civil Engineering, I.	3	Mechanics, VIII	2
Military Drill and Tactics, I	3	Mechanics, XVI.	1
		Military Drill and Tactics, I	3

Electives—Latin, I., II. Mathematics, IX. Mechanics, XXI. Drawing, III. Expression, II. Physics, V.

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* A student may elect work offered to a lower class or to the other division of his own class.

JUNIOR YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.	Mechanical Course.	Exercises per week.
Chemistry, II.	3	Chemistry, II.	3
Chemistry, III.	2	Chemistry, III.	2
German, I.	3	German, I.	3
Civil Engineering, II.	4	Mathematics, VI.	4
Botany, II.	3	Mechanics, XII.	3
Horticulture.	4	Mechanics, IX.	2
Military Drill and Tactics, I	3	Mechanics, XXII.	2
		Military Drill and Tactics, I.	3

Electives—Physics, II. French, II. Latin, I., II. Mechanics, XXI. Drawing, IV., VI. Expression, III.

WINTER TERM.

Chemistry, III.	2	Chemistry, III.	2
Chemistry, IV.	4	English, IV.	4
English, IV.	4	German, I.	3
German, I.	3	Mathematics, VI.	4
Agriculture, XXI.	5	Mathematics, VII	3
Military Drill and Tactics, I.	3	Mechanics, IX.	2
		Mechanics, XXIII	1
		Military Drill and Tactics, I.	3

Electives—Physics, II. Botany, III., IV. Horticulture. French, II. Latin, I., II. Mechanics, XXI. Military Drill and Tactics, III. Expression, III. Mathematics, X.

SPRING TERM.

English, IV.	4	English, IV.	4
German, I.	3	German, I.	3
Chemistry, VI.	3	Mathematics, VII.	3
Chemistry, VII.	2	Mechanics, IX.	2
Zoölogy, I.	3	Mechanics, II.	2
Agriculture, XXI.	2	Mechanics, I.	4
Military Drill and Tactics, I.	3	Mechanics, XXIII.	1
		Military Drill and Tactics, I	3

Electives—Physics, II., IV., VI. Botany, III., IV., V. Horticulture. French, II. Latin, I., II. Mechanics, XXI. Drawing, IV., VII. Expression, III. Mathematics, XIII.

*SENIOR YEAR.

FALL TERM.

Agricultural Course.	Exercises per week.	**Mechanical Course.**	Exercises per week.
Chemistry, VI	2	Mathematics, VII	3
Physiology, I	4	Mechanics, III	5
Agriculture, VIII	3	Mechanics, XXIV	2
Military Drill and Tactics, I	3	Mechanics, X	1
		Military Drill and Tactics	3

Electives—Chemistry, V., VIII. Physics, II. Botany, III., IV. Horticulture. English, V. German, II., V. Latin, I., II. French, II., IV., V. Political Science, I. Mathematics, XI. Mechanics, XXI. Drawing, IV., VI. Zoölogy, II., III., IV. Expression, IV. Civil Engineering, III.

WINTER TERM.

Physiology, I	3	Mechanics, III	4
Geology, I	2	Mechanics, X	1
Agriculture, X	2	Mechanics, XXIV	2
Horticulture	3	Military Drill and Tactics, I	3
Military Drill and Tactics, I	3		

Electives—Chemistry, VIII., IX. Physics, II. Botany, III., IV. Agriculture, XI. Horticulture. English, V. German, III., IV., V. Latin, I., II. French, II., IV., V. Political Science, II. Mathematics, XII., XIV. Mechanics, XXI. Military Drill and Tactics, III. Expression, IV. Zoölogy, III., V.

SPRING TERM.

Veterinary Science, I	4	Mechanics, III	5
Agriculture, XXII	1	Mechanics, XXIV	2
Horticulture	2	Mechanics, XXV	2
Military Drill and Tactics, I	3	Military Drill and Tactics, I	3

Electives—Chemistry, VIII., IX. Physics, II., III., IV. Botany, III., IV., V. Agriculture, XVIII. English, V. German, III., IV., V. Latin, I., II. French, III., IV., V. History, IV. Mathematics, XII., XIV. Astronomy, I., II. Mechanics, XXI. Drawing, IV., VII. Expression, IV. Civil Engineering, III. Zoölogy, III., IV. Psychology, I.

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* The equivalent of 15 hours of recitation per week is required.

THE PREPARATORY DEPARTMENT

OF THE

R. I. College of Agriculture and Mechanic Arts.

Students in the preparatory department may select from the following such courses as may be necessary. To complete this course will take from one to two years, depending upon the proficiency of the candidates.

The object of this course is to prepare students from the country schools for the college courses in Agriculture and Mechanic Arts.

FALL TERM.		WINTER TERM.	
English Grammar	5	Lockwood's Lessons in English	5
Elementary French	5	Elementary French	5
American History	3	American History	3
Algebra	5	Algebra	5
Plane Geometry	5	Plane Geometry	5

SPRING TERM.	
Lockwood's Lessons in English	5
Elementary French	3
American History	3
Algebra	5

Students in the preparatory department may take, together with the regular studies of this course, any other work from the college courses for which they are prepared, and which is possible with the arranged schedules.

For example, students desiring special work in Agriculture or Mechanics, who are not prepared to enter the regular courses leading to a degree, may combine with work in the preparatory department such courses in Agriculture and Mechanics as may fit their especial needs. The successful completion of such a special course will lead to a certificate covering the work completed.

The Courses of Study Leading to a Degree.

FRESHMAN.

FALL TERM.

Physiography	4
Elementary Physics	4
College Algebra	4
Rhetoric	2
French or German	5
Freehand Drawing	1

WINTER TERM.

Agricultural Course.		Mechanical Engineering, and Physical and Mathematical Courses.		Chemical, Biological, and Preparatory Medical Course.	
Elementary Physics	3	Elementary Physics	3	Elementary Physics	3
Plane Trigonometry	3	Plane Trigonometry	3	Plane Trigonometry	3
Rhetoric	2	Rhetoric	2	Rhetoric	2
French or German	5	French or German	5	French or German	5
Biology of Plants	3	Mechanical Drawing	1	Biology of Plants	3
Agricultural Mechanics	2	Woodworking	3	Elective	3

SPRING TERM.

Elementary Physics	3	Elementary Physics	3	Elementary Physics	3
Solid Geometry	3	Solid Geometry	3	Solid Geometry	3
Rhetoric	2	Rhetoric	2	Rhetoric	2
French or German	3	French or German	3	French or German	3
Biology of Plants	3	Mechanical Drawing	2	Biology of Plants	3
Agriculture I: introduction to Agriculture	2	Woodturning and Pattern-making	3	Elective	3
Mechanical Drawing	1				

SOPHOMORE.

FALL TERM.

Agricultural Course.		Mechanical Course.	
Chemistry	4	Chemistry	4
Advanced English	2	Advanced English	2
German or French	3	German or French	3
Plane Surveying	3	Analytical Geometry	4
Botany: weeds and fodder plants	3	Mechanical Drawing	2
Agriculture II. and III.: soils and drainage.	2	Moulding	2

Electives open to all courses—Free-hand Drawing, 4; Sketch Class, 1; Curve Tracing 1.

WINTER TERM.

Chemistry	5	Chemistry	5
Advanced English	2	Advanced English	2
German or French	3	German or French	3
Animal Biology	3	Analytical Geometry	4
Agriculture IV.: agricultural apparatus and constructions	3	Mechanical Drawing	1
Forging	1	Forging	2

Electives open to all courses—Photography, 1; Synthetic Geometry, 3.

SPRING TERM.

Chemistry	3	Chemistry	3
Advanced English	2	Advanced English	2
German or French	3	German or French	3
Animal Biology	3	Descriptive Geometry	3
Agriculture V.: fertilization	2	Mechanical Drawing	2
Surveying: leveling and topographical	2	Applied Electricity	3
Mechanical Drawing	2	Surveying: leveling and topographical	2

Electives open to all courses—Free-hand Drawing, 1; Sketch Class, 1; Photography, 3; Spherical and Higher Plane Trigonometry, 3.

SOPHOMORE.—*Continued.*

FALL TERM.

Physical and Mathematical Courses.		Chemical, Biological, and Preparatory Medical Courses.	
Chemistry	4	Chemistry	4
Advanced English	2	Advanced English	2
German or French	3	German or French	2
Analytical Geometry	4	Biology of Plants	3
Advanced Physics: thermometry, thermodynamics, sound and telephony	3	Elective	6

Electives open to all courses—Free-hand Drawing, 4; Sketch Class, 1; Curve Tracing, 1.

WINTER TERM.

Chemistry	5	Chemistry	5
Advanced English	2	Advanced English	2
German or French	3	German or French	3
Analytical Geometry	4	Animal Biology	3
Advanced Physics: optical phenomena and instruments	3	Elective	3

Electives open to all courses—Photography, 1; Synthetic Geometry, 3.

SPRING TERM.

Chemistry	3	Chemistry	3
Advanced English	2	Advanced English	2
German or French	3	German or French	3
Descriptive Geometry	3	Animal Biology	3
Advanced Physics: electricity and magnetism	3	Thoretical Chemistry	3
Theoretical Chemistry	3	Inorganic Preparations	3

Electives open to all courses—Free-hand Drawing, 1; Sketch Class, 1; Photography, 3; Spherical and Higher Plane Trigonometry, 3,

JUNIOR.

FALL TERM.

Agricultural Course.		Mechanical Course.	
Organic Chemistry	3	General English Literature and History	2
General English Literature and History	2	Analytical Chemistry	2
Analytical Chemistry	3	Calculus	4
Zoölogy	3	Mechanical Drawing	2
Agriculture: field and garden crops	3	Machine Shop	3
Economic Fungi (required in alternate years.)	3	Elective (Metallurgy, Mechanism).	4

Electives open to all courses.—Free-hand Drawing, 4; Sketch Class, 1 or 2; Modeling, 2.

WINTER TERM.

General English Literature and History	2	General English Literature and History	2
Comparative Anatomy	3	Calculus	4
Agricultural Chemistry	3	Machine Design	2
Quantitative Analysis: gravimetric and volumetric	3	Machine Shop	3
Horticulture II.: market-gardening and greenhouse	3	Thermo-dynamics and Steam-engine	3
Elective	3	Elective	3

Elective open to all courses—Solid Analytical Geometry, 3.
Plant-breeding, 1. Forestry, 2.

SPRING TERM.

General English Literature and History	2	General English Literature and History	2
Comparative Anatomy	3	Machine Design	2
Agricultural Chemistry	3	Machine Shop	3
Horticulture V.: pomology	3	Engineering Laboratory	1
Horticulture VI.: ornamental gardening	3	Steam Boilers	2
Elective	3	Elective (Surveying, Photography, Materials of Construction.)	3

Electives open to all courses—Free-hand Drawing, 4; Sketch Class, 1 or 2; History of Art, 1
Advanced Integral Calculus, 3. Floriculture, 3.

JUNIOR.—*Continued.*

FALL TERM.

Physical and Mathematical Courses.		Chemical Course.		Biological, and Preparatory Medical Course.	
General English Literature and History	2	Organic Chemistry	3	Organic Chemistry	3
Analytical Chemistry	2	General English Literature and History	2	Zoölogy	3
Advanced Physics: electrical measurements and testing of instruments	3	Analytical Chemistry	3	General English Literature and History	2
Calculus	4	Volumetric Analysis	2	Analytical Chemistry	3
Elective	6	Elective	6	Volumetric Analysis	3
				Elective (Scientific French or German.)	3

Given in alternate years—Economic Fungi (exclusive of bacteria), 3;

Bacteriology, 3.

WINTER TERM.

Physical and Mathematical Courses.		Chemical Course.		Biological, and Preparatory Medical Course.	
General English Literature and History	2	Organic Chemistry	3	General English Literature and History	2
Calculus	4	General English Literature and History	2	Comparative Anatomy	3
Advanced Physics: direct current, construction of dynamos and motors, tests of efficiency	3	Sanitary Chemistry	3	Sanitary Chemistry	3
Elective	8	Quantitative Analysis (gravimetric)	3	Quantitative Analysis	3
		Mineralogy and blowpipe	3	Organic Chemistry	3
		Elective	3	Elective (Scientific French or German.)	3

Elective open to all courses—Solid Analytical Geometry, 3.

SPRING TERM.

Physical and Mathematical Courses.		Chemical Course.		Biological, and Preparatory Medical Course.	
General English Literature and History	2	General English Literature and History	2	General English Literature and History	2
Advanced Physics; alternating current, manipulation of alternators, transformers	3	Organic Chemistry	3	Comparative Anatomy	3
Elective	12	Industrial Chemistry	3	Comparative Invertebrate Zoölogy	3
		Quantitative Analysis (gravimetric)	3	Elective	9
		Elective	6	(Scientific French or German, 3; Organic Chemistry.)	

Electives open to all courses—Scientific French or German, 3; Organic Chemistry, 3.

SENIOR.

FALL TERM.

Agricultural Course.		Mechanical Course.	
Veterinary Science	3	Applied Mechanics	5
Agricultural Chemistry	3	Steam-Engine Design	3
Agriculture VI.: Breeds of farm animals	3	Engineering Laboratory	3
VII.: Live stock husbandry	3	Power Transmission	3
VIII.: History of agriculture, (elective)	2	Chemical Engineering	3
Economic Fungi (required in alternate years.)	3	Analytical Mechanics	3

Electives open to all courses—Free-hand Drawing, 4; Argumentation, 2; Advanced English Literature, 3; Modeling, 2; Sketch Class, 1 or 2; Orations and Essays, 1.

WINTER TERM.

Agricultural Chemistry	3	Applied Mechanics	5
Agriculture IX.: Feeding farm animals	3	Steam-Engine Design	3
X.: Dairy Husbandry	3	Engineering Laboratory	3
XI.: Poultry farming	2	Wool and Cotton Machinery	3
XII.: Agricultural economics	2	Specifications and contracts	3
XIII.: Agricultural and horticultural literature	2	Inspection excursions	
		Thesis work	

Electives open to all courses—Solid Analytical Geometry, 3; Advanced English Literature, 3; Orations and Essays, 1.

SPRING TERM.

Agricultural Chemistry	3	Hydraulics	5
Economic Entomology	2	Mill and factory designs	3
Agriculture XIV.: Farm management	5	Engineering Laboratory	3
XV.: Farm accounts and records	1	Wool and cotton machinery	3
XVI.: Farm law	1	Specifications and contracts	3
XVII.: Apiculture	1	Inspection excursions	
XVIII.: Agricultural debate	2	Thesis work	
XIX.: Agricultural experimentation	2		

Electives open to all courses—Free-hand Drawing, 4; Sketch Class, 1 or 2; History of Art, 1; Analytical Mechanics, 3; Orations and Essays, 1; Advanced English Literature, 3.

SENIOR.—*Continued.*

FALL TERM.

Physical and Mathematical Courses.		Chemical Course.		Biological and Preparatory Medical Course.	
Projective Geometry	3	Organic Chemistry	3	†Bacteriology	3
Advanced Physics: wiring of buildings, switch-boards, systems of regulation, subways	3	Textile Coloring	3	Civil Government	3
Modern Methods in Analytics	3	Agricultural Chemistry	3	Scientific French or German	3
Heating and Ventilation of Buildings	3	Gas Analysis	3	Organic Chemistry	3
Analytical Mechanics	3	Physiological Chemistry	3	Physiological Chemistry	3
		Thesis work		Elective	3

†If not taken the previous year.

Given in alternate years—Economic Fungi (exclusive of bacteria), 3; Bacteriology, 3.

WINTER TERM.

Differential Equations	3	Organic Chemistry	3	Psychology	3
Theory of Functions	3	Textile Coloring	3	Organic Chemistry	3
Theory of Equations	3	Agricultural Chemistry	3	Physiological Chemistry	3
Advanced Physics: photometric and electric tests of lamps, safety and distributing devices	3	Physiological Chemistry	3	Elective	9
Inspection excursions		Electro-Chemistry	3		
Thesis work		Thesis work			

Electives open to all courses—Solid Analytical Geometry, 3; Advanced English Literature, 3; Orations and Essays, 1.

SPRING TERM.

Differential Equations	3	Organic Chemistry	3	Economic Entomology, elective	2
Theory of Functions	3	Textile Fabrics and Machinery, with excursions to manufactories	3	Organic Chemistry	3
Theory of Equations	3	Agricultural Chemistry	3	Physiological Chemistry	3
Methods of Teaching Mathematics	1	Physiological Chemistry	3	Elective	12
Advanced Physics; traction work and transmission of power	3	Thesis work			
Inspection Excursion					
Thesis work					

(In Botany and Zoölogy individual arrangements are to be made with heads of departments.)

AGRICULTURAL COLLEGE EXTENSION.

FOR the benefit of persons within the state who cannot attend the college as students, the faculty has arranged a course of study, known as the Agricultural College Extension. The plan, which is similar to that of the Chautauqua Reading Circle, provides a course of study embodying lines in agriculture and horticulture, as well as studies in literature and the sciences.

The course of study is designed to meet the requirements of anyone who may chose to pursue it. To complete the course, a satisfactory examination on at least one book under each number of the three years' course, given below, must be passed.

Candidates upon completing the course will receive the award of a diploma.

COURSE OF STUDY.

FIRST YEAR.

		Publisher's Price.	Price to Members of the Extension.	Postage.
1.	First Principles of Agriculture. *Voorhees*	$ 72	$ 72	$ 08
	American Literature. *Hawthorne and Lemmon*		1 12	10
2.	Home Floriculture. *Rexford*	1 50	1 20	08
	Silo, Ensilage, and Silage. *Miles*	50	38	04
	Helps for Home Makers. *Mary Blake*	75	56	08
3.	Insects and Insecticides. *Weed*	1 25	1 00	08
	The Human Body (Briefer Course). *Martin*		1 20	10
4.	Feeding Animals. *Stewart*	2 00	1 60	12
	American History. *Montgomery*		1 00	11
5.	Manual of the Constitution. *Andrews*		1 00	08

SECOND YEAR.

		Publisher's Price.	Price to Members of the Extension.	Postage.
1.	Soils and Crops. *Morrow and Hunt*	$1 00	$ 75	$ 06
	Representative English Literature. *Pancoast*		1 60	12
2.	Text-Book of Botany			
	Horses, Cattle, Sheep and Swine. *Curtis*	2 00	1 60	12
	Ornamental Gardening for Americans. *Long.*	2 00	1 50	08
3.	How the Farm Pays. *Henderson and Crozier*	2 50	1 88	12
	How to Make the Garden Pay. *Greiner*	2 00	1 60	12
	Profitable Poultry Keeping. *Beale*	1 50	1 12	08
	Anna Maria's Housekeeping. *Power.*	75	56	08
4.	Stock Breeding. *Miles*	1 50	1 12	12
	English History. *Montgomery*		1 12	11
5.	Political Economy (Briefer Course). *Walker*		1 00	08
	Astronomy. *Newcomb*		1 30	12

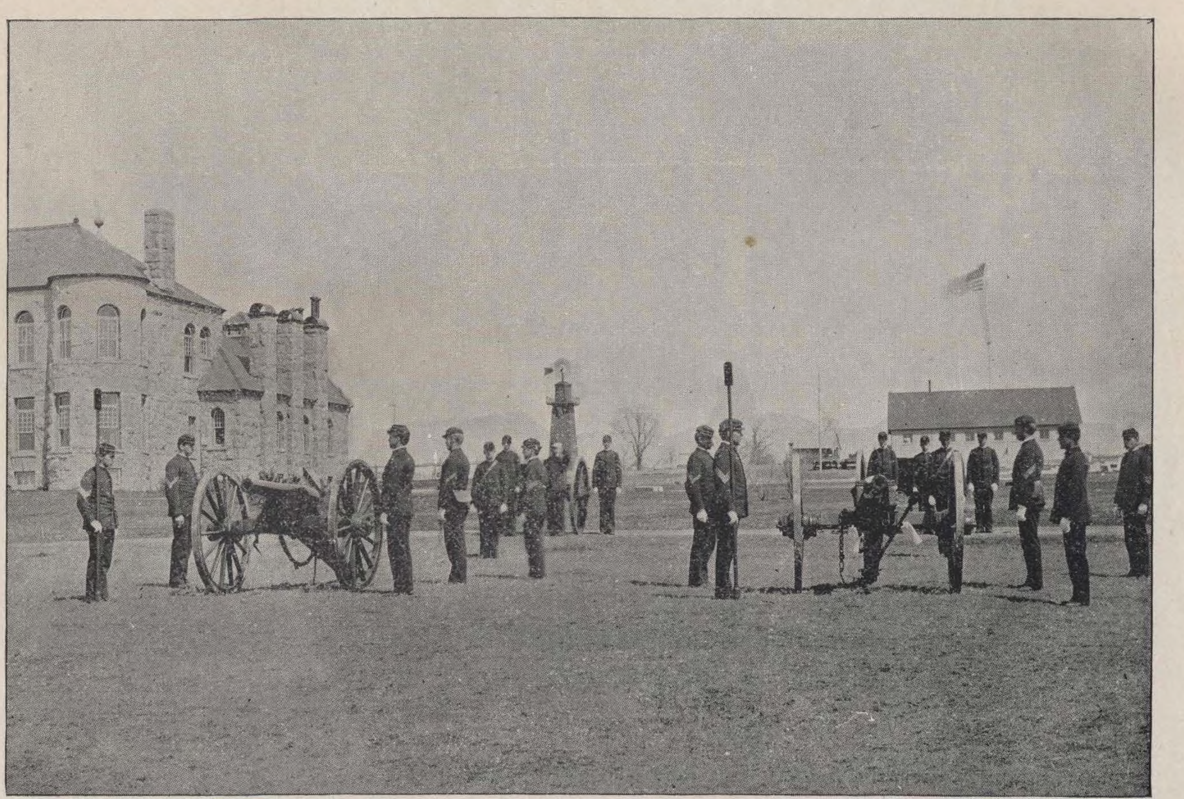
THIRD YEAR.

1.	Practical Farm Chemistry. *Greiner*	$1 00	$ 80	$ 06
	General History. *Meyers*		1 50	15
2.	A Text-Book of Chemistry			
	The Nursery Book *Bailey*	1 00	80	06
	Drainage for Profit and Health. *Waring*	1 50	1 12	08
3.	Langstroth on the Hive and Honey Bee. (Dadant's Revision)		1 12	08
	American Fruit Culturist. *Thomas*	2 50	2 00	22
	American Dairying. *Gurler*	1 00	80	06
4.	Green-House Construction. *Taft*	1 50	1 20	08
	Horse Breeding. *Sanders*	2 00	1 50	12
	Our Farming. *Terry*	2 00	1 60	13
	English translations from a foreign literature. (Books will be recommended later according to the subject chosen.)			
5.	The New Womanhood. *Fernald*	1 25	94	08
	Advanced Course in Political Economy. *Walker*		2 00	15
	Soils and Rocks. *Stockbridge*	2 50	2 25	12

SUPPLEMENTARY READING.

Below is a list of books which the faculty recommends as reading supplementary to the above course; the same is suggested as a desirable list of books for the home, grange or town library.

	Publisher's Price.	Price to Members.	Postage.
Agriculture (3 vols). *Storer*	$5 00	$5 00	$ 36
Talks on Manures. *Harris*	1 75	1 31	08
Practical Dairy Husbandry. *Willard*	3 00	2 00	16
The Grasses of North America. (Vol. I.) *Beal*	2 50	2 25	10
" " " (Vol. II.) *Beal*	5 00	4 50	29
Turkeys and how to Raise Them. *Myrick*	1 00	75	07
The Spraying of Plants. *Lodeman*	1 00	80	07
Plant Breeding. *Bailey*	1 00	80	07
Soils. *King*	75	60	05
Manures, How to Make and How to Use Them. *Burpee.*	50	38	08
The Earth and its Story. *Heilprin*	1 00	1 00	08
Fungi and Fungicides. *Weed*	1 00	75	07
Survival of Unlike. *Bailey*	2 00	1 60	10
Horticultural Rule Book. *Bailey*	75	60	06
Rural Grape Training. *Bailey*	75	65	04
Vegetable Gardening. *Greene*			
The Farmer's Veterinary Adviser. *Law.*	3 00	2 40	16
Plant Life on the Farm. *Masters*	1 00	75	06
The Sheperd's Manual. *Stewart*	1 50	1 12	11
Harris on the Pig. *Harris*	1 50	1 12	08
Practical Poultry Keeping. *Wright*	2 00	1 50	12
The Book of Poultry. *Wright.*	5 00	3 75	24
Colored Plates.	12 50	9 38	32
How Crops Feed. *Johnson*	1 50	1 12	11
How Crops Grow. *Johnson*	1 50	1 12	11
A B C of Bee Culture. *Root*	1 25	1 00	12
A Modern Bee Farm. *Simmins*			
Bees and Bee-Keeping. (2 vols.) *Cheshire*			
The Production of Comb Honey. *Hutchinson*		25	
The Production of Extracted Honey. *Cowan*			
The Incubator and its Use. *Rankin*			
Poultry for Profit. *Jacobs*			



ARTILLERY DRILL.

	Publisher's Price.	Price to Members.	Postage.
Incubators and Brooders. *Jacobs*			
Natural and Artificial Duck Raising. *Rankin*			
Poultry. (A Treatise on raising Broilers and Ducks by Artificial Means.) *McFetridge*			
Hand-book of Plants. *Henderson*	$4 00	$3 20	$ 28
Flowers, Fruits, and Leaves. *Sir John Lubbock*			
How to Know the Wild Flowers. *Dana*		1 50	Free.
Origin of Species. *Darwin*	2 00	1 50	14
Animals and Plants under Domestication. (2 vols.) *Darwin*	5 00	3 75	28
The American Commonwealth. *Bryce*		3 50	Free.
Letters to a Daughter. *Starrett*	75	60	06
How the Other Half Live. *Riis*		1 25	06
Amenities of Home	60	45	05
How to Win. *Frances E. Willard*	1 00	75	07
New England Legends and Folk Lore. *Drake*	2 00	1 50	12
A Nameless Nobleman. *Jane Austin*	1 25	94	08
Dr. LeBaron and his Daughter. *Jane Austin*	1 25	94	08
Standish of Standish. *Jane Austin*	1 25	94	08
Betty Alden. *Jane Austin*	1 25	94	08
Half Hours with American History. (2 Vols.) *Morris*	3 00	2 25	24
Masterpieces of American Literature		1 00	08
Riverside Literature Series		15	Free.
A Short History of the English People. *Green*		1 20	15
Student's History of England. *Gardiner*		3 00	15
Readings from English History. *J. R. Green*	1 50	1 12	12
English Classic Series		12	Free.
Public Opinion (Periodical)			

Any of the above books may be bought of The Rhode Island News Company, 113 and 115 Westminster Street, Providence, by members of the Extension Course, at the special price given.

Further information regarding the course may be obtained by consulting Part I. of the 1896 report or by writing to the address below.

J. D. TOWAR,
Sec. Agr. College Extension,
Kingston, R. I.

MILITARY ORGANIZATION.

COMMANDANT,

W. W. Wotherspoon, Captain Twelfth Infantry, U. S. A.

COMPANY A.

W. C. Clarke, Jr., Captain.

W. F. Harley	Second Lieutenant.
S. W. Wright	First Sergeant.
B. E. Kenyon	Sergeant.
H. A. Congdon	Sergeant.
G. T. Rose	Sergeant.
R. S. Doughty	Sergeant.
H. F. W. Arnold	Corporal.
W. C. Phillips	Corporal.
A. E. Munro	Corporal.
J. J. Fry	Corporal.

COMPANY B.

A. A. Tucker, Captain.

W. J. Taylor	First Lieutenant.
M. A. Ladd	First Sergeant.
J. P. Case	Sergeant.
W. L. W. Clarke	Sergeant.
A. W. Bosworth	Sergeant.
W. F. Owen	Sergeant.
H. Knowles	Corporal.
R. N. Soule	Corporal.
C. Knowles	Corporal.
A. Pearson, Jr.	Corporal.

Lieut. W. F. Harley	Battalion Adjutant.
H. W. Case	Bugler.

BOTANICAL CLUB.

IN CHARGE OF THE PROFESSOR OF BOTANY.

Those interested in botanical subjects meet occasionally to discuss the local flora and simple botanical literature.

ZOÖLOGICAL CLUB.

The Zoölogical Club meets bi-weekly for the study of the local fauna, for the presentation of brief papers, and for the review of current journals. A special room is devoted to the collections and preparations made by the club. The daily observations by the members upon the occurrence, habitat, structure, life history and habits of the animals, are on file for ready reference. Special excursions are made to favorable localities. Opportunities for field work in zoölogy are remarkably fine.

OFFICERS.

C. B. MORRISON	President.
A. PEARSON, JR.	Vice-President.
H. KNOWLES	Secretary.
E. PAYNE	Curator.

CHEMICAL CLUB.

The Chemical Club meets once in two weeks for the purpose of discussing the literature upon chemical, physical, and agricultural subjects. The French, German, and English journals are distributed among the members, and reports are received from time to time on subject matter from thirty-five different journals.

OFFICERS.

Charles F. Kenyon	President.
Dr. J. E. Bucher	Vice-President.
H. F. W. Arnold	Secretary.

RELIGIOUS ORGANIZATIONS.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

H. M. Brightman	President.
E. R. Piper	Vice-President.
A. Bosworth	Cor. Secretary. Rec. Secretary.
H. D. Smith	Treasurer.

YOUNG WOMEN'S CHRISTIAN UNION.

M. W. Harvey	President.
B. E. Bentley	Vice-President.
E. M. Parkhurst	Secretary.
S. L. James	Treasurer.

ALUMNI ASSOCIATION.

HOWLAND BURDICK, President.

GEORGE A. RODMAN, Secretary, Woonsocket. R. I.	CHARLES L. SARGENT, Treasurer, Peacedale, R. I.

STUDENTS.

POST GRADUATES.

Adams, George Edward	Rocky Brook,	R. I.
Greeman, Adelaide Maria	Kingston,	"
Grinnell, Archie Franklin	Middletown,	"
Hammond, John Edward	Jamestown,	"
Hanson, Gertrude Maie	Peace Dale,	"
Kenyon, Charles Franklin	Shannock,	"
Marsland, Louis Herbert	Franklin,	N. Y.

GRADUATES OF 1897.

Carmichael, Welcome Sands, Sci	Shannock,	R. I.
Case, Herbert Edwards Brown, Mech	Pawtucket,	"
Grinnell, Archie Franklin, Mech	Middletown,	"
Hanson, Gertrude Maie, Sci	Peace Dale,	"
Hoxsie, Bessie Bailey, Sci	Quonochontaug,	"
Larkin, Jessie Louise, Sci	Westerly,	"
Kenyon, Charles Franklin, Mech	Shannock,	"
Kenyon, Albert Prentice, Mech	Ashaway,	"
Marsland, Louis Herbert, Mech	Franklin,	N. Y.
Tefft, Eliza Alice, Sci	Allenton,	R. I.
Thomas, Irving, Mech	Lafayette,	"

SENIORS.

Arnold, Sarah Estelle, Sci	Wakefield,	R. I.
Barber, George Washington, Agr	Shannock,	"
Cargill, Edna Maria, Sci	Abbott Run,	"
Case, John Peter, Agr	Gould,	"
Clarke, William Case, Jr., Sci	Wakefield,	"

Congdon, Henry Augustus, Mech	Kingston,	R. I.
Flagg, Martha Rebecca, Sci	Kingston,	"
Harley, William Ferguson, Agr	Pawtucket,	"
Rose, George Tucker, Agr	Kingston,	"
Taylor, William James, Sci	Mendon,	Mass.
Turner, Harriette Florence, Sci	Ontario Centre,	N. Y.
Wilson, Grace Ellen, Sci	Allenton,	R. I.

JUNIORS.

Allen, Nathaniel Bertram, Agr	Pawtuxet,	R. I.
Arnold, Henry Francis Walling, Mech	Woonsocket,	"
Arnold, Everett Mullen, Sci	Wood River Junc.,	"
Bosworth, Alfred Wilson, Sci	Boston,	Mass.
Cargill, James Edward, Mech	Abbott Run,	R. I.
Cumming, John Stuart, Mech	Pawtucket,	"
Harvey, Mildred Wayne, Sci	Allenton,	"
Kenyon, Blydon Ellery, Agr	Wood River Junc.,	"
Knowles, Carroll, Mech	Kingston,	"
Knowles, Harry, Agr	Point Judith,	"
Ladd, Merrill Augustus, Mech	Bay Shore,	N. Y.
Owen, William Frazier, Mech	Cannonsville,	"
Payne, Ebenezer, Sci	Lyons Farms,	N. J.
Phillips, Walter Clark, Mech	Lafayette,	R. I.
Pierce, Nellie Hollis, Sci	Malden,	Mass.
Reynolds, Robert Spink, Mech	Wickford,	R. I.
Rice, Minnie Elizabeth, Sci	Wickford,	"
Sherman, Abbie Gertrude, Sci	Kingston,	"
Sherman, George Albert, Mech	West Kingston,	"
Thompson, Sally Rodman, Sci	Wakefield,	"
Wells, Grace Perry, Sci	Kingston,	"

SOPHOMORES.

Brightman, Henry Maxon, Mech	Westerly,	R. I.
Cross, Charles Clark, Mech	Narragansett Pier,	"

Cross, Morton Robinson, Mech.	Wakefield,	R. I.
Eldred, John Raleigh, Mech.	Kingston,	“
Fison, Gertrude Sarah, Sci.	Peace Dale,	“
Fry, John James, Mech.	East Greenwich,	“
Grant, Arnold Theodore, Mech.	Newport,	“
James, Ruth Hortense, Sci.	Kenyon,	“
James, Sarah Lila, Sci.	Kenyon,	“
Jollie, Charles Andrew, Mech.	Providence,	“
Kenyon, Amos Langworthy, Agr.	Wood River Junc.,	“
Knowles, Leroy Weston, Agr.	Point Judith,	“
Munro, Arthur Earle, Agr.	Quonochontaug,	“
Northup, Abbie Fidelia, Sci.	Wickford,	“
Pearson, Alfred, Jr., Sci.	Newburyport,	Mass.
Soule, Ralph Nelson, Mech.	Wickford,	R. I.
Steere, Anthony Enoch, Sci.	Chepachet,	“
Stillman, Lenora Estelle, Sci.	Kenyon,	“
Tucker, Bertha Douglass, Sci.	Swansea Centre,	Mass.
Wheeler, Charles Noyes, Sci.	Shannock,	R. I.
Wilson, James Robert, Mech.	Belleville,	“

FRESHMEN.

Andrews, Carlton Garfield	Potter Hill,	R. I.
Briggs, Nellie Albertine	Shannock,	“
Burgess, Charles Stuart	Providence,	“
Clarner, Louis George Karl, Jr.	Pawtucket,	“
Dawley, Edna Ethel.	Kenyon,	“
Dawley, William James	Kenyon,	“
Denico, Arthur Albertus	Narragansett Pier,	“
Graham, Ernest	Wakefield,	“
Grinnell, Robert Elisha	Middletown,	“
Harrower, Charles Spurgeon	Peace Dale,	“
Hopkins, Henry Oscar	Plainfield,	Conn.
Landers, Adolph Earl	Newport,	R. I.
LeClair, Charles Arthur	Bristol,	“

Moffitt, William Smith	Newport,	R. I.
Newton, Dudley, Jr	Newport,	"
Palmer, Sadie Wilcox	Wakefield,	"
Reuter, Louis John	Westerly,	"
Sherman, Anna Brown	Kingston,	"
Sherman, Arthur Almy	Portsmouth,	"
Sherman, Elizabeth Agnes	West Kingston,	"
Sherman, Walter Nathaniel	Allenton,	"
Smith, Howard Dexter	North Scituate,	"
Soule, George Canning, Jr	Wickford,	"
Stillman, Fannie Esther	Kenyon,	"

SPECIALS.

Arnold, William Ballou	Woonsocket,	R. I.
Bacheller, William Stanhope	Newport,	"
Baldwin, Margaret	Aspen Wall,	Va.
Bates, Edward Ayer	Pawtucket,	R. I.
Briggs, Glenn Ira	Woonsocket,	"
Campbell, Duncan	Phenix,	"
Case, Harold Warren	Pawtucket,	"
Clarke, Latham	West Kingston,	"
Clarke, William Lamont Wheeler	Jamestown,	"
Conant, Walter Aiken	Wellesley Hills,	Mass.
Crandall, Linton B	Ashaway,	R. I.
Cullen, Edmund Daniel	East Greenwich,	"
Dimock, Mary Winifred	Merrow,	Conn.
Doughty, Robert Stanley	Providence,	R. I.
Emmet, James R.	Peace Dale,	"
Flagg, Clarence LeVoy	Arnold Mills,	"
George, Lillian Mabelle	Amesbury,	Mass.
Goddard, Edith	Brockton,	"
Greene, Prescott Morrill	Peace Dale,	R. I.
Harrison, Edmund	Ashbury Park,	N. J.
Hopkins, Fannie Lewis	Plainfield,	Conn.

Hurter, Florence Dudley	Somerville,	Mass.
Krekorian, Garabed	Harpoot,	Turkey.
Lanphear, Elisha Frederic	Peace Dale,	R. I.
Morrison, Clifford Brewster	Pawtucket,	"
Nash, Clarence Earl	Watch Hill,	"
O'Neil, Henry Francis	Providence,	"
Parkhurst, Elizabeth May	Wickford,	"
Peckham, Herbert James	Middletown,	"
Piper, Edgar R.	Kingston,	"
Sherman, Oscar Dean	Wickford,	"
Sherman, Robert Joseph	Usquepaug,	"
Sisson, Borden Lawton	South Portsmouth,	"
Sisson, Marion Sumner	South Portsmouth,	"
Spink, Myra Bertine	Wickford,	"
Steere, Roena Hoxsie	Wood River Junc.,	"
Tucker, Attmore Arnold	Wakefield,	"
Webster, Bertie James	Usquepaug,	"
Wells, Emily Potter	Kingston,	"
Wells, Herbert Comstock	Kingston,	"
Whitman, Chester Wilson	Arctic,	"
Wightman, Levi Eugene	South Scituate,	"
Wilby, John	Kingston,	"
Wilcox, Charles William	Kingston,	"
Wright, Silas Wilber	Wakefield,	"

SPECIALS IN WOOD-CARVING.

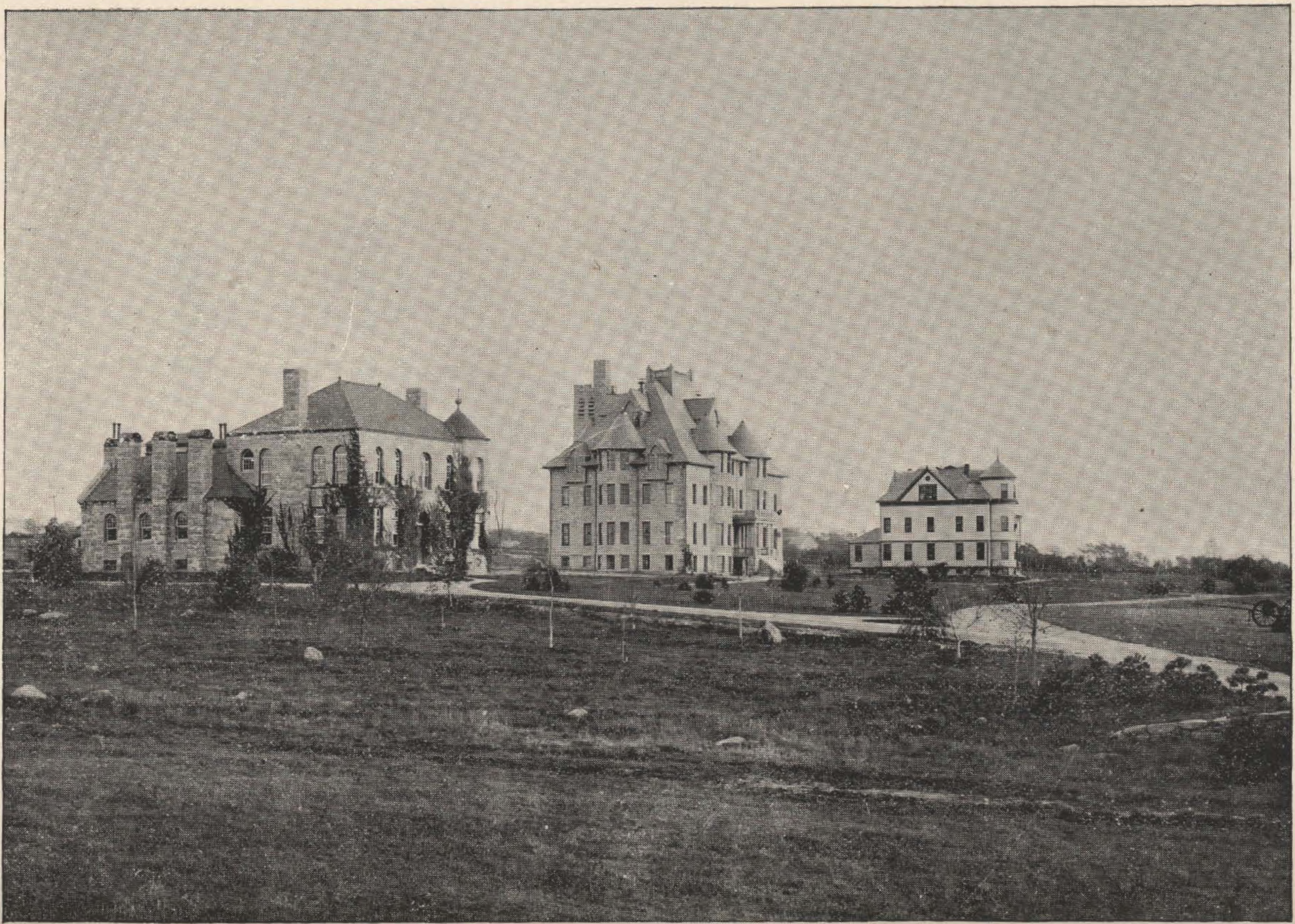
Mrs. Charles Auel	Shannock,	R. I.
Mrs. Charles Armstrong	Wakefield,	"
Mrs. Ellen Bosworth	Kingston,	"
Miss Mary J. Brown	Kingston,	"
Mrs. George Carmichael	Shannock,	"
Miss Bertha Carr	Kingston,	"
Mrs. George Clark	Shannock,	"
Miss Julia Clarke	Shannock,	"

Mrs. A. A. Greenman	Kingston,	R. I.
Miss May J. Lanphear	Peace Dale,	"
Mrs. W. J. Nichols	Shannock,	"
Miss Mary E. Wright	Shannock,	"

SPECIALS IN POULTRY SCHOOL.

Dallas, Roderick W	Bayonne,	N. J.
Hill, Paul	Lowell,	Mass.
Lewis, Aubrey C	West Kingston,	R. I.
Marion, F. L	Woburn,	Mass.
Riley, Anna L	New York,	N. Y.
Ternberg, E. S	East Greenwich,	R. I.
Valentine, Mrs. F. H	Cranford,	N. J.
Wildman, J. W	Newton Upper Falls,	Mass.

Post Graduates	7
Graduates of 1897	11
Seniors	12
Juniors	20
Sophomores	21
Freshmen	24
Specials	47
Specials in Wood-carving	12
Specials in Poultry School	8
Total, counting none twice.	162
Students in College Extension courses	32



TAFT LABORATORY. DAVIS HALL. BOARDING HALL.

TREASURER'S REPORT.

MELVILLE BULL, *Treasurer*, *in account with the* RHODE ISLAND COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

1897.		DR.	
Jan.	1.	To cash balance on hand	$129 20
		Interest from 1862 fund	2,941 60
		J. H. Washburn, President, for students' board, etc.	8,450 00
		Incidentals, credits, cash	4,072 40
		Cash received from interest	18 48
			$15,611 68

1897.	CR.	
	By salaries	$1,182 19
	Postage, stationery and printing	168 50
	Freight and expressage	809 73
	Traveling	109 32
	Labor	4,402 02
	Store	1,199 14
	Incidentals	3,706 63
	Construction and repairs	797 02
	Provisions	2,531 97
	Boarding expense	574 75
	Cash on hand Jan. 1, 1898	130 41
		$15,611 68

THIS IS TO CERTIFY that the undersigned, auditing committee of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, have examined the accounts of Melville Bull, treasurer, as above, and find the same to be correct, leaving a balance in said treasurer's hands of one hundred and thirty dollars and forty-one cents ($130.41).

GARDINER C. SIMS,
J. V. B. WATSON.
Auditing Committee.

THE RHODE ISLAND AGRICULTURAL EXPERIMENT STATION *in account with the* UNITED STATES' APPROPRIATION.

1897.	DR.		
	To receipts from the treasurer of the United States as per appropriation for the year ending June 30, 1897, under act of Congress approved March 2, 1887........		$15,000 00
1897.	CR.		
	By salaries................................	$9,098 89	
	Labor..................................	2,076 86	
	Publications............................	1,143 60	
	Postage and stationery	122 84	
	Freight and expressage..................	222 11	
	Heat, light and water......	136 50	
	Chemical supplies.....	39 67	
	Seeds, plants, and sundry supplies........	729 44	
	Fertilizers..........	350 78	
	Feeding stuffs...........................	29 00	
	Library..............	16 40	
	Tools, implements, and machinery.	170 42	
	Furniture and fixtures......	47 39	
	Scientific apparatus......................	45 81	
	Live stock.............................	75 25	
	Traveling expenses.............	150 43	
	Contingent expenses...........	16 75	
	Building and repairs.................. ..	527 86	
			$15,000 00

WE, the undersigned, duly appointed auditors of the corporation, do hereby certify that we have examined the books and accounts of the Rhode Island Experiment Station for the fiscal year ending June 30, 1897; that we have found the same well kept, and classified as above, and that the receipts for the year from the treasurer of the United States are shown to have been fifteen thousand dollars, and the corresponding disbursements fifteen thousand dollars; for all of which proper vouchers are on file, and have been by us examined and found correct.

And we further certify that the expenditures have been solely for the purpose set forth in the act of Congress approved March 2, 1887.

Signed,

GARDINER C. SIMS,
J. V. B. WATSON,
Auditors.

NEWPORT, R. I., August 28, 1897.

I hereby certify that the above is a true copy from the books of account of the institution named.

MELVILLE BULL,
Treasurer.

I hereby certify that the above signature is that of the treasurer of the Rhode Island College of Agriculture and Mechanic Arts.

C. H. COGGESHALL,
President of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts.

MELVILLE BULL, *Treasurer, in account with the* RHODE ISLAND AGRICULTURAL EXPERIMENT STATION.

1897.	DR.	
June 30.	To balance from last year	$1,154 20
	Station receipts	2,429 73
	Station receipts, fertilizer inspection	2,856 54
	Interest	59 87
		$6,500 34

1897.	CR.	
	By Labor	$63 10
	Postage and stationery	23 60
	Heat, light and water	4 14
	Seeds, plants and sundry supplies	15 34
	Fertilizer control	2,863 40
	Feeding stuffs	176 83
	Library	657 75
	Tools, implements and machinery	34 57
	Furniture and fixtures	510 04
	Scientific apparatus	8 28
	Live stock	11 37
	Traveling expenses	18 88
	Building and repairs	962 32
	Balance on hand	1,150 72
		$6,500 34

This certifies that the undersigned, auditing committee of the Board of Managers of the Rhode Island College of Agriculture and Mechanic Arts, have examined the accounts of Melville Bull, treasurer of the Agricultural Experiment Station, and the vouchers corresponding therewith, for the year ending June 30, 1897, and find the same correct.

Total receipts are $6,500.34, and the total expenditures are $5,349.62, leaving a balance of $1,150.72 to new account.

GARDINER C. SIMS,
J. V. B. WATSON,
Auditing Committee.

MELVILLE BULL, *Treasurer, in account with* UNITED STATES' SPECIAL APPROPRIATION.

1896.	DR.	
June 30.	To balance on hand	$1,093 34
	Interest	46 04
		$1,139 38
	CR.	
	By Library	$719 84
	Furniture and fixtures	419 54
		$1,139 38

We, the undersigned, duly appointed auditing committee, hereby certify that this account has been compared with the regular Station account and found correct, with no balance.

GARDINER C. SIMS,
J. V. B. WATSON,
Auditing Committee.

Synopsis of the Report of the Treasurer of the Rhode Island College of Agriculture and Mechanic Arts to the Secretary of Agriculture and the Secretary of the Interior, of amount received under Act of Congress, of August 30, 1890, in aid of Colleges of Agriculture and the Mechanic Arts, and of the disbursements thereof, to and including June 30, 1897.

Balance on hand July 1, 1896	$32,227 29
Installment for 1896–'97, received July 23, 1896	22,000 00
Total available for year ending June 30, 1897	$54,227 29

DISBURSEMENTS THEREOF FOR AND DURING THE YEAR ENDING JUNE 30, 1897.

SCHEDULE A.—Disbursements for Instruction in Agriculture and for facilities for such instruction	$6,631 46
SCHEDULE B.—Disbursements for Instruction in Mechanic Arts and for facilities for such instruction	6,721 54
SCHEDULE C.—Disbursements for Instruction in English Language and for facilities for such instruction	3,169 22
SCHEDULE D.—Disbursements for Instruction in Mathematical Science and for facilities for such instruction	1,275 07
SCHEDULE E.—Disbursements for Instruction in Natural or Physical Science and for facilities for such instruction	13,068 01

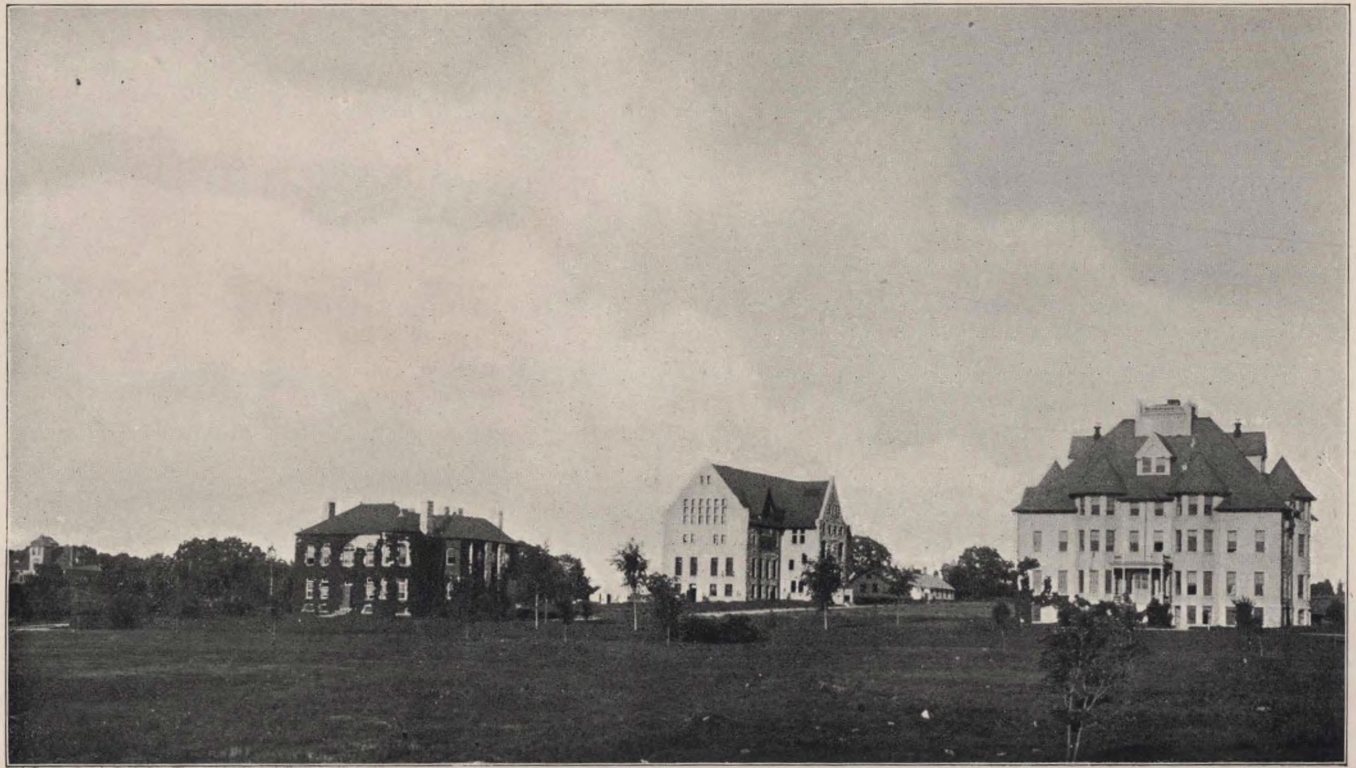
SCHEDULE F.—Disbursements for Instruction in Economic Science and for facilities for such instruction	24 80	
Total expended during the year		$30,890 10
Balance remaining unexpended June 30, 1897		23,337 19
		$54,227 29

I HEREBY CERTIFY that the above account is correct and true, and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named; and that said expenditures were applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction.

MELVILLE BULL, *Treasurer.*

INVENTORY OF THE PROPERTY OF THE RHODE ISLAND COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

Property of the Department of Agriculture and Horticulture	$11,165 28
Property of the Department of Mechanic Arts	14,962 41
Property of the Department of English and History	5,489 77
Property of the Department of Mathematics	1,679 97
Property of the Departmant of Natural Sciences	23,606 08
Property of the Department of Political Science	273 08
Property of the Boarding Department	2,405 80
Property of the Women's Dormitory	1,300 00
Guns, cannon, and other military equipment	4,641 00
Furniture in offices and schoolrooms	1,816 00
Scientific apparatus, tools, and machinery of the Experiment Station.	5,194 11
Books of the Experiment Station	3,405 40
Other property of the Experiment Station	7,071 50
Amount of personal property	$83,010 40



GENERAL VIEW OF CAMPUS.

Watson House	$2,500 00
Hothouse	200 00
Ladd Laboratory	10,000 00
Blacksmith Shop	400 00
Carpenter Shop and Chemical Laboratory	4,850 00
Boarding Hall	10,000 00
Davis Hall	45,000 00
Lippitt Hall	45,000 00
Water Supply	10,000 00
Taft Laboratory	20,000 00
Barns	5,000 00
Farms, roads, and improvements	18,000 00
Amount of real estate	$170,950 00
Total amount of real estate and personal property	$253,960 40